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The Declining Middle: Mass Politics in Times of Automation

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Abstract

English

Widespread political dissatisfaction and the rise of populist parties have disrupted the politics of many post-industrial democracies. This dissertation asks to what extent occupational change and technological progress are responsible for the political turmoil we currently observe. The core finding is that relative shifts in societal standing, an inevitable consequence of a changing employment structure, are key to understanding contemporary politics: it is a perception of relative decline among politically powerful groups, not their impoverishment, that drives support for nationalist populist movements.

This dissertation argues that we cannot understand the political repercussions of economic conditions in general – and occupational change in the age of automation in particular – without a clear distinction between absolute and relative economic decline. The empirical analysis demonstrates that these distinct experiences trigger different political reactions: "surviving" in an increasingly hostile occupational environment mobilizes affected citizens and increases the demand for identity politics, whereas actually becoming unemployed prompts an economic response. This finding has important policy implications: When relative decline rather than absolute economic hardship is behind the appeal of populist parties, the often-stated remedy of 'more welfare' will be an insufficient response to cushion the negative societal and political byproducts of economic modernization.

Deutsch

Weitverbreitete politische Unzufriedenheit und der Aufstieg populistischer Parteien haben die politische Arena vieler postindustrieller Demokratien grundlegend verändert. Inwieweit sind beruflicher Wandel und technologischer Fortschritt für diese politischen Umwälzungen verantwortlich? Die zentrale Erkenntnis dieser Dissertation ist, dass relative Verschiebungen innerhalb der Gesellschaftsstruktur ein wichtiger Schlüssel zum Verständnis der gegenwärtigen Politik sind: Es ist die Erfahrung von sozialem Abstieg, nicht akute materielle Not, die politisch einflussreiche Gruppen mobilisiert und Unterstützung für rechtspopulistische Parteien generiert.

Die politischen Auswirkungen des technologischen Wandels können nur dann vollständig erfasst werden, wenn klar zwischen absolutem und relativem wirtschaftlichen Abstieg unterschieden wird. Die empirische Analyse zeigt, dass diese unterschiedlichen Erfahrungen sehr verschiedene politische Reaktionen auslösen: Arbeitende, die in einem zunehmend von Automatisierung bedrohten Arbeitsumfeld "überleben", werden mobilisiert und fühlen sich von Identitätspolitik der Rechten angesprochen, während effektive wirtschaftliche Not und Arbeitslosigkeit Individuen demobilisiert und, wenn überhaupt, die ökonomischen Rezepte der Linken attraktiv macht. Aus diesem Ergebnis folgt, dass ein Ausbau traditioneller Sozialpolitik unzureichend sein wird, um die negativen gesellschaftlichen und politischen Folgen wirtschaftlicher Modernisierung abzufedern.

Contents

Preface

Many people have provided me with essential support during the past 3½ years. But first and foremost, I want to express my heartfelt thanks to Silja Häusermann. I never planned to write a dissertation, but Silja's fine-tuned sense for socially relevant research questions, and her contagious and inspirational enthusiasm for political science helped to change my mind. I have learned enormously from Silja, both work and non-work-related things, and I honestly could not imagine a better supervisor. Grazie tantissimo.

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For everyone who knows me a little better, it is no surprise that this last paragraph is dedicated to Cloé, who has been the most wonderful partner through all these years. While we certainly share many things beyond a fascination for politics and political science, your steadfast belief in the importance of my research, your constant encouragement, and simply spending time with you was the single most important power source along the way to my Ph.D.

Surlej, December 2017

1 Synopsis

1.1 Introduction

Widespread political dissatisfaction, increasing anti-establishment rhetoric, and the rise of populist parties have disrupted the politics of many post-industrial societies. Brexit and the election of Donald Trump are just the most visible signs of profoundly changing patterns of mass opinion, which challenge basic pillars of the political system in many advanced capitalist democracies. This dissertation asks about the structural economic determinants of the observed disruptions and examines in what ways a changing occupational structure impinges on affected citizens' political participation and vote choice.

At least since the Industrial Revolution, pundits and the public alike have had a keen interest in the social and political consequences of economic modernization and the concomitant evolution of the employment structure. Karl Polanyi (1944) famously warned against the social dislocations created by the rise of an unregulated market economy, and accordingly predicted a backlash against the "liberal creed". Structural changes, such as deindustrialization and globalization, continued to transform the highly industrialized economies of Western Europe into post-industrial societies; and a vast literature has studied political implications of these processes (e.g. Ruggie, 1982; Kitschelt, 1994; Esping-Andersen, 1999; Iversen & Cusack, 2000; Kriesi, Grande, Lachat, Dolezal, Bornschier & Frey, 2006; Oesch, 2006; Häusermann, 2010; Walter, 2015).

I am grateful to Silja Häusermann, Nils Redeker, Tobias Rommel, Denise Traber, and Stefanie Walter for very helpful comments on structure and content of this introduction.

In recent years, the most important factor behind occupational change has been technology (Oesch, 2013; Goos, Manning & Salomons, 2014; OECD, 2017). Debates about the impact of technological change on employment structures have a long tradition, and scholarly interest has waxed and waned over time. From the introduction of the weaving machine to the invention of the personal computer, technological progress has regularly and repeatedly transformed the world of work. New jobs come, and old jobs go; some parts of society benefit, and some lose out. Accordingly, technological progress has always been met not only with approval, but also with skepticism and sometimes even open hostility. The most famous example of the latter being the Luddite movement in Britain's early industrial history. Fearing the labor-saving effect of new machines by which "one man can do as much [...] as near twenty without them" (Hobsbawm, 1952, p. 62), the Luddite protests occasionally culminated in riots and the outright destruction of the more productive, mechanized competitor.

Although today's inventions and newly introduced machines look entirely different from those attacked by Luddites 200 years ago, their impact on the social relations of production and total labor demand are similarly momentous and have attracted considerable public attention. Rapid advances in automation, digitalization, and computerization have pushed us into a new era in which a great number of novel jobs have emerged, while many existing occupations face the risk of extinction.

An extensive literature in labor economics and economic sociology has documented the main features of the employment structure in times of automation (Autor, Levy & Murnane, 2003; Goos & Manning, 2007; Autor & Dorn, 2009; Acemoglu & Autor, 2011; Oesch, 2013; Goos et al., 2014). Computers tend to *complement* workers concerned with non-routine tasks at the lower, and especially, the upper end of the skill spectrum. At the same time, computers *substitute* for moderately skilled routine tasks (Autor et al., 2003). The heterogeneous impact of technology results in an overall pattern of 'polarized upgrading' of the labor force: strong employment growth at the top, strong decline in the middle and limited growth at the bottom (Oesch & Rodriguez-Menes, 2011).

The common trend of a stark contraction in moderately skilled occupations is the main motivation for this dissertation. Computer capital quite specifically threatens routine workers who carry out a well-defined but perhaps complex set of cognitive or manual activities that follow explicit rules (Autor et al., 2003). These routine jobs, for example secretaries, bank tellers, but also blue-collar jobs, such as machine operators, tend to be concentrated in the middle of the skill distribution (Goos & Manning, 2007). Yet, unskilled service workers have been less exposed to automation because many activities in this sector are based on personal interaction or hand-eye coordination. This applies, for example, to janitors or care assistants. Hence, in contrast to transformations of labor markets related to different structural processes, such as deindustrialization or globalization, the adverse consequences of technological change are not primarily felt among the usual suspects, i.e. the low-skilled, but strike right in the middle of society.

This dissertation asks about the political consequences of occupational change in times of automation. More precisely, the core interest of this dissertation lies in the political response, in terms of political participation and vote choice, of routine workers to a previously unknown level of vulnerability. In the second half of the twentieth century, routine work has guaranteed a decent standard of living with the prospects of upward mobility (Nachtwey, 2016). But these times of "collective ascent" (Mau, 2015) are over. Routine workers, who belong to the "twilight zone between the working and the middle class" (Oesch, 2013, p. 148), suddenly find themselves in an environment of uncertainty and structural decline. How does the "declining middle", no longer protected from the vagaries of economic modernization, react to this new reality in the face of rapid technological progress?

Despite a lively public debate, surprisingly little is known of the political implications of occupational change in times of automation. Against the backdrop of long-standing and reoccurring fears of job destruction due to technological innovation, much of the existing literature has focused on overall welfare: Will new technologies create more jobs than they destroy? At the same time, however, distributive questions have largely been neglected. Even if technological change results in a net growth of jobs, whole sections of society are

being left behind. Production workers or office clerks at risk of being replaced by robots or smart software will find little comfort in an overall well-oiled economic machine and exciting new jobs in artificial intelligence.

Questions of economic distribution always have political implications and the neglect of the first leaves us with very limited knowledge of the latter. In addition, acknowledging the very particular distributive impact of technology on the employment structure — with disadvantages concentrated in the middle rather than the bottom of the skill distribution — makes clear that existing theories to analyze the relationship between structural economic change and political reactions most likely fall short of providing an adequate analytical framework to study the political implications of technological change. What routine workers in the lower middle-class experience is first and foremost a *relative* decline in economic standing and societal status. A good part of those employed in routine work will manage to cling to their jobs in an increasingly hostile economic environment. Superficially considered, one might mistake their economic situation as stable. However, stability (or stagnation) is of limited satisfaction when other parts of the labor force are thriving, or at least catching up.

In order to precisely reveal and identify the mechanisms linking gradual technology-induced occupational change to individual political reactions, we need to extend our focus beyond economic hardship in absolute terms and integrate fundamentally important questions of relativeness. Evidentially, social and historical reference points powerfully shape individual performance evaluation (Runciman, 1966; Gurr, 1970; Wood, 1989; Suls & Wheeler, 2000; Olsen, 2017). Reference points turn out to be equally important in revealing the political consequences of technological change. The distinction between absolute and relative economic conditions is key to understanding today's politics. I will argue and demonstrate that increasingly bleak perspectives for this once crucial pillar of society go a long way in explaining the political disruptions we currently observe. Relative shifts in societal standing, an inevitable consequence of a transforming employment structure, are an important driving force behind both political participation and vote choice. It is this *perception of rela-*

tive decline among politically powerful groups, not their impoverishment that fuels political mobilization and support for nationalist populist movements.

Neglecting relative shifts in economic standing over time conceals important political implications of belonging to one occupational group or another. By implication, the existing political science literature on the impact of occupation *per se* is insufficient to understand populist reactions to economic insecurity. What is needed, instead, is a framework of analysis that focuses on occupational *change*. The study of absolute material conditions cannot fully capture, and thus potentially underestimates, the impact of transforming labor markets on the political landscapes of advanced capitalist democracies. As a result, such a partial understanding of the politically relevant consequences of technological change might lead to misguided policy decisions. When relative decline rather than absolute economic hardship is behind the appeal of anti-system parties, the often-stated remedy of 'more welfare' to cushion the negative societal and political byproducts of technological change will be an insufficient response to satisfy exposed workers and counter the ascent of right-wing populism.

1.2 Outline of the Argument

Several different structural forces have shifted labor demand in advanced capitalist democracies, the most important arguably being deindustrialization, technological progress, and the globalization of markets. While the effects of different underlying driving forces of occupational change are difficult to disentangle and at times go hand in hand, in this dissertation I focus on technological change, for two reasons. First, although globalization and trade tend to dominate the public discussion and, to a lesser extent, academic debate, in recent years more and more evidence showing the disproportionate overall impact of technology on employment composition has accumulated: Technological change and digitalization are the most important factors behind occupational change (e.g. Oesch, 2013; Goos et al., 2014;

OECD, 2017; IMF, 2017; Rodrik, 2017).[1] Second, an important and, from a research perspective, attractive aspect of technological change is the heterogeneous impact on different types of jobs with the disadvantages so far strongly concentrated on a clearly delineated, electorally relevant group of citizens. While technological innovation offers immense opportunities for many, it is routine workers who bear the brunt of progress.

Against this backdrop, researchers interested in the political consequences of technological change might be tempted to concentrate on the most obvious losers of employment polarization: first and foremost, those routine workers who lost their jobs and perhaps also those who were forced to downgrade into low pay service-sector jobs or involuntarily ended up in early retirement. Indeed, commentators have been quick to relate the 'Brexit/Trump moment' (Dodd, Lamont & Savage, 2017) to rising inequality (Stiglitz, 2016), globalization (Rodrik, 2017), or technological change (Frey, Berger & Chen, 2017), which produce a loosely and variably circumscribed group of frustrated, economically worse-off citizens who form the backbone of support for newly erupted anti-elite politics.

While there is certainly some truth to this reading of events, the underlying mechanisms linking long-term economic developments on the macro-level to the reconfiguration of the political space are less well understood. A puzzling mismatch between findings based on different levels of analysis bedevils the lively debate about the antagonism of economic versus cultural roots of populism. Studies drawing on various kinds of local labor market data and political outcomes on the regional level provide evidence for economic reasons behind recent political disruptions (Autor, Dorn, Hanson & Majlesi, 2016; Colantone & Stanig, 2016; **?**; Becker, Fetzer, Novy & others, 2016; Gingrich, 2017; Frey et al., 2017; for dissent, see Freund & Sidhu, 2017). In contrast, studies based on individual-level data have difficulty revealing clear associations between material interests and support for populist parties, and tend to conclude that non-economic motives might prevail over economic motives (e.g.

[1] Recent evidence from the United States indicates that the primacy of technology might not (or not anymore) hold for the manufacturing sector, where in recent years import competition, mainly from China, has been particularly consequential. The primary impact of technology on employment has increasingly shifted from manufacturing to routine information-processing tasks in the service industry (Autor, Dorn & Hanson, 2015).

Inglehart & Norris, 2016). The analysis behind the root causes of recent economic turmoil is further complicated by questions like: Why would economically worse-off citizens suddenly flock to the ballot box when decades of research show a strong relationship between lower resources and political abstention? Why should we observe a rise of populist anti-system parties around the globe when the relative share of high-skilled and often culturally liberal employees in non-routine work steadily increases? Why should moderately skilled routine workers susceptible to automation vote for right-wing populist parties instead of welfare parties?

In this dissertation, I argue that a focus on absolute economic hardship obscures important facets of how transforming labor markets shape contemporary politics. Despite the polarizing effects on the labor market, increasing automation does not result in immediate mass unemployment among routine workers. Technological change is a gradual, long-term development and a significant part of the threatened group of routine workers will manage to "survive" in their occupations despite contracting employment opportunities. The declining share of routine work is to some extent related to increased exit rates, e.g., towards retirement, and reduced rates of entry from new entrants to the labor market. Beyond that, routine workers in principle can switch into other occupations when confronted with employment frictions (Cortes, 2016). However, the observation that survivors in routine work manage to cling to their jobs must not hide the fact of important *relative shifts* in their well-being. In a nutshell, the main claim of this thesis is that we cannot understand the political repercussions of economic conditions in general, and occupational change in times of automation in particular, without taking questions of distribution and relativeness seriously. In times when rapid advances in automation and computerization profoundly alter job skill demands, routine workers will experience drastic changes in their relative position in society even if they manage to remain in their initial occupation. A changing employment structure alters the value and esteem attached to different kinds of work and distorts the traditional configuration of labor markets — and hence the order of society altogether.

Quintessentially, taking relativeness seriously means that political disruptions caused by transformations in the labor market can work strikingly independently from actual economic hardship in absolute terms. I propose that the behavioral implications of a *relative* deterioration in well-being are crucial to understand how a changing employment structure concomitant with technological change shapes affected citizens' decision whether to take part in politics and, if yes, which political side to support. In light of the heterogeneous impact of technology on the employment structure, the economic and psychological literature on reference points provides valuable guidance in revealing the precise mechanisms connecting economic conditions and political reactions in times of automation. Early research on social comparison processes has established that individuals collate their current fate with (i) their own previous conditions and with (ii) the current conditions of other parts of society. These two relevant standards of reference have been coined historical and social reference points, respectively (Simon, 1939).

Reflecting on the pattern of occupational change observed since the late 1980s makes clear why reference points matter for the study of routine workers' political behavior. Labor market polarization implies job growth in high- and low-paying jobs and a stagnating or rather decreasing number of medium-pay routine jobs. While their intermediate situation in absolute (or static) terms might give limited reason to expect politically relevant grievances, job polarization clearly imposes considerable pressure on routine workers in a more comparative-dynamic perspective. High-skilled and highly specialized non-routine workers benefit from technology that complements their work and pull away. At the same time, the low-pay service sector is much less threatened by automation and is also expanding in many countries. In relative terms, then, routine workers have much more reason for dissatisfaction: the level of unemployment risk is still lower than in low-skilled non-routine jobs but has massively increased over time due to the job squeeze in the middle. The same is true for wages. While the wage level in routine occupations lies in between high-skilled and low-skilled non-routine jobs, wage growth for a person in routine work has clearly lagged wage growth for persons in any kind of non-routine work (Cortes, 2016).

To sum up, the main losers of technological change, routine workers, in many cases do not suffer from absolute economic hardship and poverty, but from relative social decline, which I propose is a similarly powerful determinant behind individual political behavior. The exact political reaction, however, differs crucially from the experience of absolute decline. First, as material conditions in absolute terms remain on comparable levels, there is no reason to expect political abstention based on personal resources. To the contrary, much in contrast to long-term structural disadvantage, a relative deterioration in economic circumstances over time might produce a kind of dissatisfaction beneficial to political activity. Second, with respect to vote choice, explanations based on relative rather than absolute hardship might yield hypotheses that strongly deviate from expectations derived from rational decision making. If relative decline and status anxiety rather than actual material hardship dominates a voter's view on politics, non-economic political demands might be more pressing than social security and insurance against potential job loss in the future. A perception of relative economic decline in the absence of absolute material hardship increases the salience of identity politics and decreases the salience of policies on the state-market dimension of the political space. Hence, the conceptual distinction between absolute and relative decline allows for a more nuanced analysis of the political reactions to occupational change, and significantly improves our understanding of the closely intertwined economic and cultural roots of populism.

1.3 Findings, Contribution and Relationship to Existing Literature

The main contribution of this dissertation lies in systematically theorizing and empirically integrating the role of relativeness in perceptions of economic conditions for individual political behavior. This is first and foremost a conceptual effort, resulting in a much more nuanced understanding of economic grievances; and this nuance is consequential with respect to both routine workers' expected level of political participation and their vote choice. Two important results stand out. First, much in contrast to long-term structural disadvantage, a

relative deterioration in economic circumstances over time has a politically mobilizing effect and increases both turnout and protest activity of affected citizens. Second, regarding vote choice, tracing individuals over time demonstrates that it is those individuals who remain in shrinking sectors of the economy, not those who lose their jobs, who support parties from the right in general and right-wing populist parties, in particular. The reason for this lies in the relative salience of economic and cultural political demands when being confronted with either absolute or relative economic decline. "Surviving" in an occupational environment of structural decline makes routine workers receptive to identity politics addressing status anxiety. However, as soon as fear of decline turns into actual experience of material hardship, the primacy of status anxiety evaporates, resulting in a reduced demand for identity politics. Taken together, the experience of relative economic decline in a transforming world of work mobilizes routine workers politically and the beneficiaries of this mobilization are found primarily among parties from the right. Technological change is thus a likely driving force behind the ascent of nationalist populist movements around the globe.

Ignoring relative changes in economic conditions might lead researchers to underestimate the economy's impact on political behavior because seemingly stable and perhaps even comfortable objective economic circumstances might not be perceived as such by citizens when their societal position has deteriorated in relative terms. Such relative decline negatively affects social status, which is based on "differences in honor, esteem, and respect" (Weber, 1918, cited in Ridgeway, 2014). Status anxiety has been shown to be a powerful micro motive not only for behavior and self-perception in general (Ridgeway, 2014), but also for political attitudes and party choice (Gidron & Hall, 2017). Social status thus represents an indirect channel through which the economy affects political behavior where anxiety makes citizens particularly receptive to policies opposing cultural modernization. This channel remains hidden when neglecting the importance of reference points in self-evaluation. An important implication is that labor market transformations of a fundamentally economic nature can result in supposedly non-economic political manifestations (see Rodrik, 2017).

My study builds on and speaks to three different strands of political science literature. First, theories on turnout in general and grievance theory in particular that focus on individuals' motives to take part in politics. Second, research in international and comparative political economy concerned with the political implications of economic risk. And third, the influential realignment literature studying the reconfiguration of the political space because of economic modernization in the form of de-industrialization or globalization.

The *turnout literature* is rooted in political behavior research and has studied the impact of individual characteristics as well as context conditions on conventional participation. *Grievance theory*, in contrast, has evolved in social movement research and has been promoting the conjecture that social unrest and protest evolve as a reaction to injustice and deprivation. This literature therefore conveys the important idea that economically-based grievances do not necessarily alienate but perhaps mobilize citizens (e.g. Gamson, 1968). This stands in sharp contrast to the traditional socio-economic status (SES) model (e.g. Verba & Nie, 1972), which associates low or decreasing economic resources with lower political activity. Grievance theory thus offers important insights when pondering the precise behavioral impetus of economic conditions. However, these economic explanatory factors are usually not the primary focus of studies in this vein and often remain undertheorized. These studies might consider differences in employment status (being unemployed or not, e.g. Rosenstone (1982)) or income (being poor or not, e.g. Mahler (2008)), or subjective economic hardship (improved or decreased, e.g. Ruedig and Karyotis (2014)), but they certainly lack the subtlety of the two necessary dimensions of comparison discussed above. Without applying a reference point, it is hard to decide what is good or bad performance (Olsen, 2017). Each kind of comparison introduces a distinct element of relativeness to someone's economic standing and this different reference points turn out to trigger opposing behavioral reactions.

More fine-grained conceptualizations of (relative) economic conditions thus help reconcile the contradictory perspectives dominating the existing literature. However, this more nuanced reading of economic drivers of political participation only addresses the first step

of political behavior, mobilization, and we can only speculate about the political beneficiaries. The comparative and international *political economy* literatures bring us one step closer to the aim of assessing the political consequences of technological change. The foundations of this strand of research lie in the theorization and assessment of the (political) implications of an uneven distribution of economic conditions within countries (Meltzer & Richard, 1981; Moene & Wallerstein, 2001; Iversen & Soskice, 2001; Rueda, 2005; Rehm, 2009; Walter, 2010; Emmenegger, Häusermann, Palier & Seeleib-Kaiser, 2012; Rehm, Hacker & Schlesinger, 2012; Margalit, 2013; Owen & Johnston, 2016). These contributions have contributed massively to our understanding of the political implications of various forms of economic vulnerability.

The political economy literature provides valuable and necessary, yet not sufficient guidance for an encompassing assessment of the political consequences of technological change for two reasons. The political economy literature is most-often interested in the link between economic adversity and political preferences, but much less in the actual behavior of individuals on election day. However, it is difficult to infer participation and party choice, a crucial piece of any examination of technology's political implications, from specific policy preferences. In the end, on election day voters need to choose from different "policy packages" (Emmenegger, 2009). Knowledge on individual attitudes towards a particular policy field, however, leaves open the question of the relative importance of that very policy in determining the preferred overall policy package, that is, the chosen political party (a notable recent exception is Rommel & Walter, 2017).

Yet, much of the political economy literature closely follows the logic of the seminal Meltzer-Richard model, which offered a rational theory of welfare demand based on the distribution of productivity/income and individual utility maximization. The underlying economic rationale produces clear-cut theoretical expectations with respect to individuals' material interest based on 'hard' socio-economic characteristics. However, this strand of research has difficulty accommodating to questions of relativeness and the influence of *relative* changes in economic hardship or vulnerability. The focus is rarely on temporal changes pivotal to

assess relative shifts in economic grievances. Changes over time are cleared of baseline levels and therefore capture a distinct aspect of economic grievances. An individual might be confronted with comparatively low levels of, e.g., labor market risk, but an increase in that risk, irrespective of its absolute level, might well be intimidating and politically consequential. So, the response to a relative increase in vulnerability might look quite different from the response to the experience of higher levels of absolute hardship as the core motive behind the political reaction is not primarily rooted in pressing material scarcity.

A third informative source for the argument made in this dissertation is the contribution of studies on the reconfiguration of the political space as a consequence of economic modernization in the form of de-industrialization or globalization (Kitschelt, 1994; Kitschelt & McGann, 1995; Kriesi et al., 2006; Kitschelt & Rehm, 2015). This strand of literature argues that occupations are an important site of preference formation. Consequently, transformations of the employment structure not only profoundly alter the composition of the labor force, but also change the aggregate distribution of political preferences in a society. The most important implication of a changing quantitative distribution of such preferences in times of economic modernization is the increasing significance of a second cultural dimension alongside the state-market cleavage. The emergence (or reinterpretation) of a second dimension structuring the political space leads to a shift of the main area of the voter distribution as well as the main axis of party competition (Kitschelt, 1994). Parties and voters do not move in parallel, however. To the contrary, the reconfiguration of the political space goes hand in hand with significant electoral realignment. Social democratic parties' increasing emphasis on cultural liberalism is accompanied by increasing support from the emerging new middle class and increasing alienation among their former core voters in lower socio-economic strata (Kitschelt, 1994; Oesch, 2008a; Rennwald & Evans, 2014; Gingrich & Häusermann, 2015; Kitschelt & Rehm, 2015). These studies shed light on the mechanisms between labor market experience and political behavior that depart from plain material utility maximization and can explain political outcomes that do not tie in smoothly with the underlying resource-based logic of traditional political economy models.

What Kitschelt and other seminal contributions provide is a detailed account of why and how occupational environments determine political attitudes. What they do not provide, however, is a discussion of how economic modernization alters the very work experience within occupational groups over time. Put differently, they theorize and empirically examine the political ramifications of occupation *per se* but they do not provide a theory of occupational *change*. The explanation for why the area of political contestation has shifted in post-industrial societies rests on a static discussion of preference formation within distinct occupational groups and the subsequent evaluation of how the relative proportion of those groups changes in the process of economic modernization. That is, the transformed configuration of aggregate political preferences on the demand side is explained by the changing occupational composition of the electorate. As discussed above, however, structural labor market transformations not only change the proportions of different occupations, but also their relative societal position. Dwindling value and esteem attached to a specific job most certainly affects the occupational experience, which, following Kitschelt and others, is directly linked to political preferences. Composition effects can account for the changing electorate of social democratic parties noted in the realignment literature, but they cannot explain positional moves of an occupational group, most evidently the right-wing turn among workers, from the former social democratic core electorate. There is no explicit micro-level explanation why the cultural dimensions started to dominate the economic dimension. Rather, the political realignment of the working class is explained with reference to the political supply side and other contextual factors of the political system (Kitschelt, 1994; Bornschier, 2010). A dynamic perspective of occupational change adds a demand-side explanation to the success of right-wing populist parties, which squares nicely with the idea that occupational experiences shape political preferences.

To conclude, a more comparative-dynamic perspective on the relationship between experiences in the labor market and political reactions considerably improves our understanding of the underlying motives leading routine workers to voice their dissatisfaction in the political arena. A focus on the changing value and esteem of certain occupations relative to others,

an inevitable consequence of economic modernization, highlights powerful determinants of individual political behavior, such as status anxiety, which remain concealed in the more static existing frameworks to analyze political implications of structural economic change. Grievance theory would predict increased participation but remains silent on the political beneficiaries of this mobilization. The political economy literature would primarily expect a boost for left parties as increasing economic vulnerability spurs pro-welfare preferences. The arguments of the realignment literature based on the composition of the labor force predicts a strengthened cultural-liberal pole as high-skilled, often interactive jobs grow relative to the rest of the labor force. A focus on relative decline adds to these partly conflicting predictions by providing a demand-side perspective on the relative salience of economic as opposed to cultural demands. A perception of relative economic decline mobilizes citizens' anti-status quo positions and increases the salience of the cultural dimension. The mobilizing effect partly compensates for the constantly shrinking proportion of routine workers.

1.4 Detailed Findings / Summary of Papers

This dissertation consists of three papers that analyze the overarching question of how a profoundly changing employment structure in times of economic modernization impinges on citizens' political participation and vote choice. The relationship between economic conditions and political behavior has always been of great interest to pundits and the broader public alike. It stands to reason that the most recent economic downturn has done no harm to this research agenda. While the details are far from settled, most contributions agree that the economy does substantially affect elections - usually to the detriment of the incumbent party (e.g. Kriesi, 2014). Interestingly, much less is known about the arguably preceding decision to take part in politics. The focus on party choice and concurrent neglect of political participation is surprising given the crucial difference electoral and protest mobilization often makes. While party switching among active voters is relatively rare, activating undecided, potentially abstaining voters is much more likely (Lazarsfeld, Berelson & Gaudet, 1948).

So, the first two papers examine the relationship between economic grievances and political participation in the (1) electoral and the (2) protest arena. The third paper then studies the political beneficiaries in the case of successful mobilization and looks at (3) vote choice of citizens affected by occupational change. The three contributions jointly produce the argument and evidence discussed in the synopsis thus far.

Paper 1: Economic Hardship and Turnout: A Reference Point Approach

The first paper extensively discusses the existing literature on reference points to develop a more nuanced conceptualization of economic grievances, which is the basis for a more comprehensive understanding of the relationship between occupational change and the political turmoil we currently observe around the globe. After this conceptual effort, the paper then theorizes how far the distinction between relative and absolute economic decline adds to the existing literature on the relationship between economic grievances and conventional political participation, the first dependent variable of interest. Based on literature in social psychology and behavioral economics, I discuss the distinct psychological implications of long-term structural disadvantage, that is economic hardship in comparison with other parts of society, as opposed to an increase in economic grievances on any level, that is economic hardship in comparison with previous conditions. The first between-groups comparison is closely related to the arguments of the socio-economic model, an empirically powerful approach claiming that lower socio-economic status, i.e. absolute economic decline, results in lower political participation (e.g. Verba & Nie, 1972). In contrast, within-subject comparisons with previous conditions deliver a distinct kind of reference point. Deprivation over time can happen on any level of absolute economic hardship, is much more volatile, and affects a broader and more diverse subset of society. It is therefore weakly correlated with socio-economic status. And due to its volatility, is certainly not considered as naturally given and unalterable. Hence, the experience of deteriorating economic conditions over time is not so strongly related to resources but rather to motivational or psychological engagement (Verba, Schlozman & Brady, 1995). The weak relation to absolute levels of

resources does not prevent strong behavioral reactions, however. Seminal research at the intersection of psychology and economy has long demonstrated the firm human aversion to losses relative to same-sized gains (Kahneman & Tversky, 1979). Deprivation over time (net of absolute levels) is expected to produce a kind of dissatisfaction beneficial to political activity (Barnes, Farah & Heunks, 1979).

An empirical analysis demonstrates the added value of more careful conceptualization of economic grievances. Using large-scale labor market data (EU-SILC) to operationalize absolute and relative material conditions and cross-sectional survey data covering 30 elections from 18 European countries between 2005 and 2015 (CSES), the analysis shows that different dimensions of comparison have different behavioral implications. While economic hardship relative to others demobilizes citizens, an increase in hardship relative to previous conditions indeed mobilizes individuals. These counteracting forces remain concealed when relying on traditional conceptualizations of material conditions. A reference point approach to economic grievances thus considerably improves our understanding of mass politics in hard times. The refined, more precise conceptualization of economic hardship sheds light on the longstanding puzzle of conflicting findings by revealing the counteracting forces of structural economic disadvantage vs. deprivation over time.

Paper 2: Economic Grievances and Political Protest

co-authored with Silja Häusermann, Bruno Wüest and Matthias Enggist

The second paper has a similar starting point as the first, but concentrates on a different dependent variable and considers contextual factors moderating the direct link between grievances and political participation. Most of the existing research also adopts a rather narrow focus on conventional political participation, and is primarily concerned with the effect of economic grievances on the propensity to vote. However, such a focus on national elections and electoral behavior might be problematic when assessing the political consequences of occupational change. First, electoral politics and the economy follow different

temporal patterns. At the time of experiencing economic adversity, for example being laid off in routine work, a reaction via elections might simply not be at citizens' disposal. Citizens are likely to look for immediate opportunities to express their grievances rather than waiting for the next election to punish governments at the ballot box (Kriesi, 2014). Second, the opportunities to express economic grievances remain strongly constrained by political supply-side factors: voters are reliant upon the existing parties, or the candidates running for election, and might not find a suitable channel to satisfactorily express their dissatisfaction. So, in this article we focus on unconventional political participation. These are the means of political engagement available at any time for anyone, whenever deemed necessary and effective.

The second important addition is our focus on contextual factors that either facilitate or aggravate individual political reactions to occupational change. We aim at explaining some of the contradictory expectations in the existing literature by bridging two strands of research all too often treated in isolation: the social movement and the political economy literature. We argue that political mobilization is a decisive moderator, and contend that publicly visible collective action strongly affects the direct, structural link between the experience of individual economic hardship and protest. Grievances do not translate directly into protest activity. Rather, collective actors must politicize economic adversity for dissatisfied citizens to be both able and willing to voice their grievances.

For the empirical assessment of our theoretical expectations, we combine large-scale labor force data (EU-SILC), survey data on individual protest participation (ESS), and original data on protest mobilization covering 28 European democracies between 2006 and 2012. We report two important findings. First, regarding the direct effect of economic grievances on protest behavior, we find, perfectly in line with the first paper, that the conceptualization of grievances matters crucially. While structural economic disadvantage unambiguously de-mobilizes individuals, the deterioration of economic prospects instead increases political activity. The findings of the first paper therefore also apply with respect to unconventional political participation. Second, we provide robust empirical evidence for our central

hypothesis that the level of political mobilization indeed substantially moderates this link between individual hardship and political activity. In a strongly mobilized environment, even structural economic disadvantage is no longer an impediment to political participation. We contend that there is a strong political message in this interacting factor: if the presence of organized and visible political action is a decisive signal for citizens and conditions the micro-level link between economic grievances and protest, then democracy itself, i.e. organized collective action, can help sustain political equality and prevent the vicious circle of democratic erosion.

Paper 3: Political Reactions to Occupational Change

Paper number three, finally, studies the impact of technology-induced occupational change on vote choice and sheds light on the complex interactions between the cultural and economic roots of populism. Rapid advances in automation and computerization push us into a new era in which a great number of novel jobs emerge while at the same time at least as many existing ones disappear. The most pervasive trend is a stark contraction in middle-skilled jobs dominated by repetitive routine tasks. This paper asks about the political repercussions of this profound and far-reaching transformation of labor markets. I will argue and demonstrate that employment trajectories are key to understanding the political consequences of technological change. Occupational transitions result from changing labor demand in an increasingly automated world of work strongly affect political attitudes. Of crucial importance is the distinction between relative economic decline and absolute material hardship. "Surviving" in an occupational environment of structural decline makes routine workers receptive to identity politics addressing status anxiety. However, as soon as they leave the contracting environment of routine work — for better or worse — the primacy of status anxiety evaporates, which results in strongly declining levels of support for conservative and right-wing populist parties.

I leverage individual-level panel from Germany, Switzerland, and the United Kingdom and an empirical strategy tailored to dynamic processes, such as occupational transitions (so-called marginal structural models). The use of panel data is an important step forward in two respects. The relative frequency of different transitions out of routine work can be empirically quantified. Yet, as actual shifts in employment over time are observed, this approach allows for effectively disentangling the effects of relative and absolute shifts in economic well-being. This distinction allows for a more nuanced analysis of the political reactions to occupational change and significantly improves our understanding of the closely intertwined economic and cultural roots of populism. The empirical analysis demonstrates that fear of social decline, an inevitable consequence of a transforming employment structure, rather than the actual experience of economic hardship, is what spurs support for right-wing populist parties. This finding has important implications for the debate over how to respond to recent political disruptions and suggests that the often-stated answer of "more welfare" will be an insufficient response to counter the ascent of right-wing populism.

1.5 Implications

The final part of the introduction to my dissertation is dedicated to some reflections on the broader implications of my findings, including a discussion of liberal democracy's prospects in the face of a profoundly transforming employment structure. The first part of this final section will summarize political repercussions of technological change as discussed and analyzed in the thesis, that is, the development during the past roughly two decades. A second part will then present an outlook by offering two distinct scenarios on the structure of future labor markets in times of reinforced computerization and automation and discuss the political implications based on the findings of this dissertation.

As a starting point, Figure 1.1 provides a stylized graphical overview of the political consequences of technological change up to now. The visualization maps the three basic task groups under consideration, non-routine cognitive (NRC), routine (R), and non-routine

manual (NRM), as well as labor market dropouts (DO) in the two-dimensional political space. The size of the circles approximately corresponds to the four groups' proportions. Dashed lines indicate the size of the group about 20 years ago, solid lines show today's proportions in Western Europe.

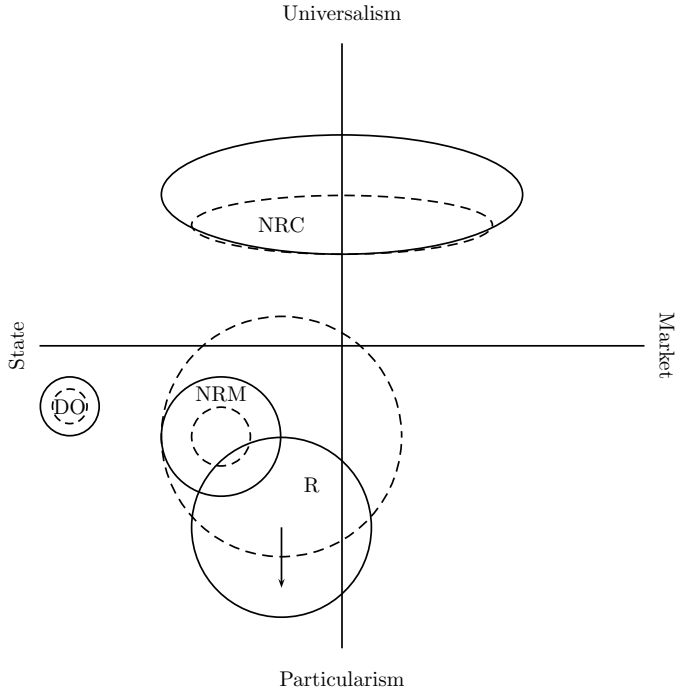

FIGURE 1.1: Political Consequences of Technological Change: Contemporary Situation

The most obvious political implication of a changing employment structure is the change in the composition of the labor force, which directly translates into a changing composition of the electorate. One major outcome of economic modernization in general, and technological change in particular, is the growth in highly specialized non-routine cognitive occupations. Workers in growing high-skill and high-pay jobs belong to the winners of a transforming employment structure and this positive work experience translates into culturally liberal political preferences (Kitschelt, 1994; Oesch, 2013; Kitschelt & Rehm, 2014). Depending on the primary work logic defining these demanding non-routine jobs, individuals will combine their culturally liberal, universalist attitudes with either more pro-state or more pro-market stances on the economic dimension (Oesch, 2006), resulting in an increasingly large chunk

of the electorate located in the culturally liberal part of the two-dimensional political space. The political implications of this compositional effect have been extensively discussed in the literature, first and foremost with respect to the increasing importance of high-skilled socio-cultural specialists among the core electorate of social democratic parties (e.g. Kitschelt, 1994; Kriesi, 1998; Oesch, 2008a; Gingrich & Häusermann, 2015). Technological change, especially when characterized by a pattern of occupational upgrading, neither initiates nor changes, but reinforces this trend that originates in structural forces, for example deindustrialization, that left their marks on the employment structure long before automation and digitalization started to dominate the debate.

The development at the other end of the skill spectrum is a more specific consequence of the impact of technological change on labor demand. Up until now, not only high-skilled, but also low-skilled non-routine occupations benefited from relatively low levels of susceptibility to automation. In most countries, this resulted in at least limited job growth in low-skilled employment primarily in the service sector. No party traditionally mobilizes this part of the electorate, which has been coined the "new service proletariat" (Bernardi & Garrido, 2008) or simply the "new working class" (Oesch, 2006), and the literature has only recently started to systematically analyze their political preferences. Ares (2017) shows that the old and new working class hardly differ in both preferences and vote choice, which is largely in line with my finding of indistinguishable vote intentions between survivors in routine works and downgraders into non-routine manual jobs. This leads me to place the small but growing group of low-skilled non-routine workers in the lower left quadrant next to routine workers' initial position.

Dropouts, that is, those workers who are made redundant by new technology and are unable to find another job, have not massively expanded yet, despite recurrently raised fears of the 'end of work' (Rifkin, 1995). Those citizens who nevertheless have ended up in unemployment and thus experience absolute economic decline have been shown to increasingly support left-wing parties or abstain from electoral politics altogether.

The fate of routine workers is the core topic of this dissertation and their gradual decline one of the main motivations for this project. The decreasing size of the circle representing their proportion of the labor force therefore needs no further explanation. However, I want both to clarify the reasons and to highlight the importance of their relocation in the political space emphasized by an arrow indicating the direction of change. Perhaps the most important finding of this thesis is that the experience of working in an occupational environment of structural decline, such as in routine work, provokes mobilizing resistance against an increasingly somber status quo and fuels support for nationalism and social conservatism. Crucially, technological innovation therefore not only influences the composition of the electorate, but also affects the political behavior of negatively affected groups. Such modifications in political behavior do not necessarily stem from a spatial shift in the political position of the remaining routine workers, but might simply result from an adjustment of the relative salience of the two dimensions determining individual political choices and defining the political space.

While the political implications of the shifting proportions of different subsets of the electorate are well-captured by the literature on the impact of occupations on preference formation, research along this vein has more difficulties with explaining preference change within occupations. The very reasons behind workers' increasing emphasis on cultural issues, which have been identified as the main determinant behind their political turn to parties from the right (Oesch, 2008b), remain tacit beyond the often-made reference to a certain "backlash" against liberal values (see, e.g., Kitschelt, 1994; Bornschier, 2010) . Studying the reconfiguration of the political space through the lens of occupational *change* adds a perfectly compatible and dynamic element to the idea that the work environment is an important site of preference formation. Technological change not only affects the composition of the labor force, but also the experience workers make in their jobs — or rather the outside perception of their occupations, which crucially affects routine workers' relative societal position.

To sum up, Figure 1.1 displays the political repercussions of a transformed employment structure as a consequence of technological change. In most countries of Western Eu-

rope, this transformation follows the pattern of polarized upgrading, meaning strong growth in high-skilled jobs, a decrease in semiskilled jobs, and limited growth in low-skilled jobs (Oesch, 2013). This polarization of the employment structure translates directly into political polarization along the cultural axis. A perception of relative economic decline in the absence of absolute material hardship increases the salience of identity politics and hence erodes moderate positions on cultural issues, while mitigating the immediacy of pro-welfare demands. The hollowing of the middle exposes a particularly large and politically powerful group, routine workers, to exactly this combination of economic vulnerability and hence goes a long way in explaining the ascent of right-wing populist movements in many Western European countries.

Two factors beyond the change in the relative salience of cultural vis-a-vis economic policies account for the at first glance counterintuitive finding that a shrinking group accounts for the rise of a party family. First, as has been shown in this dissertation, relative economic decline not only differs from absolute hardship in terms of political priorities, but also political activity. The group of routine workers might gradually decline in size and proportion, but the remaining core is politically mobilized and willing and able to voice dissatisfaction in the political arena. Second, the growth in the low-skilled service sector, a specific implication of technological change, to some extent substitutes for the decline of routine work. While participation rates might be lower, political preferences and priorities seem to strongly resemble those of (blue-collar) routine workers (Ares, 2017).[2]

Outlook

A theoretical framework of occupational change considers both compositional changes in the electorate between occupations and attitudinal changes within occupations over time. This framework of analysis combined with projections about the development of the employment

[2]For the sake of completeness, it should be noted that the so-called 'petite bourgeoisie', small, independent business people, who are not displayed in Figure 1.1 due to their independent work logic, have always belonged to the core electorate of right-wing populist parties (e.g. Kitschelt & McGann, 1995) and clearly add to the stabilization of the right-wing populist support coalition.

structure in coming years and decades provide the basis for an outlook on future challenges to liberal democracy. Unsurprisingly, experts disagree on the future impact of new technology on the world of work. While we are currently in a phase of disruption and transition, markets can clear in very different ways. Much of the social and political outlook depends on how rapidly and how comprehensively novel technologies will transform labor markets and society. In essence, the exact contours of this transformation determine the proportion of losers of technological change, in both absolute and relative terms, and these proportions, in turn, shape the political outcomes. At the risk of over-simplification, we can distinguish between an optimistic and a pessimistic perspective.

The optimistic perspective points to a long history of economic modernization accompanied by creative destruction, which always produced fears of technological unemployment that in the end proved spectacularly wrong. The number of people working in the first sector of the economy, agriculture, massively dropped because of some early waves of automation, but an even larger number was re-employed in manufacturing. The optimists expect entrepreneurs to find new ways to redeploy labor capacities and workers to learn the necessary new skills to succeed (Brynjolfsson & McAfee, 2012). The pattern of polarized upgrading is often interpreted in that light: the decline in intermediate jobs should not hide the fact that the overall class structure has moved upwards. In this reading, high-skilled occupations complemented by new technology are expected to see continued expansion in the future, which does not necessarily come at the cost of higher unemployment because the lowly educated themselves become scarcer (Oesch, 2013).

Ironically, the more pessimistic social and political perspective is grounded on techno optimism. The exact shape of the future employment structure depends strongly on one's belief in the progress of modern computer technology, first and foremost artificial intelligence, in the near future. The scope of what computers can do expands massively and rapidly and will inevitably continue to do so (Brynjolfsson & McAfee, 2012; Frey & Osborne, 2013). What contemporary technological innovations fundamentally differentiates from previous inventions is the capability of autonomous learning. While computer's impact on routine

work is evident, non-routine tasks will increasingly become susceptible to automation, too. Supplementing the task-based logic that underlies this thesis with a forward-looking perspective, Frey and Osborne (2013) concluded in a startling and widely discussed article that almost half of total US employment is at risk of being replaced by computers in the next 10 or 20 years. While this estimation might be slightly over-pessimistic (see Arntz, Gregory & Zierahn, 2016), it is certainly true that automation will also increasingly confront non-routine occupations. This not only applies to the often-stated examples of super market cashiers and taxi drivers, but also to high-skilled and prestigious work, for example in law firms where automated text analysis supports and complements one lawyer so efficiently that many less trained and highly specialized employees are needed to accomplish the same amount of work. Without question, technology radically improves an economy's productivity, but this progress does not benefit everyone in a society (Brynjolfsson & McAfee, 2012). In that sense, digital technologies that will increasingly perform tasks not long ago the domain of humans, might further reinforce the distributive tensions that motivated this dissertation.

Figure 1.2 attempts to sketch these two perspectives and their political implications. The solid lines correspond to the ones displayed in the previous figure and display approximations of the three task-groups' current proportions and locations in the political space. Dotted lines provide stylized estimates of future proportions according to the two distinct perspectives discussed above. The optimistic view emphasizes the upskilling of society over time, resulting in a continuously growing share of high-skilled non-routine manual workers located at the culturally liberal pole of the political space. At the same time, a residual core of routine work might prove robust to automation and I expect those remaining workers to display much lower levels of status anxiety, and thus be less prone to culturally conservative stances. Low-skilled non-routine work will remain important, not least because the growing share of highly productive workers in high-skilled jobs will increasingly make use of personalized services (Wright & Dwyer, 2003). After a profound transformation of labor markets, this new equilibrium promises relatively quiet political waters. A large share of an

increasingly skilled society works in exciting and demanding jobs and is expected to form a dominant political pillar with culturally liberal and economically moderate preferences. The upgrading of the employment structure will also provide a healthy foundation for fiscal revenue, which allows for redistributive policies to support the less skilled part of society in relatively secure but perhaps poorly paid semi- or low-skilled occupations. The positive economic climate should translate into moderated political outcomes. Right-wing populism's angry resistance against cultural change and economic modernization should find little fertile ground once the transformation into a skilled and highly automated service economy is completed.

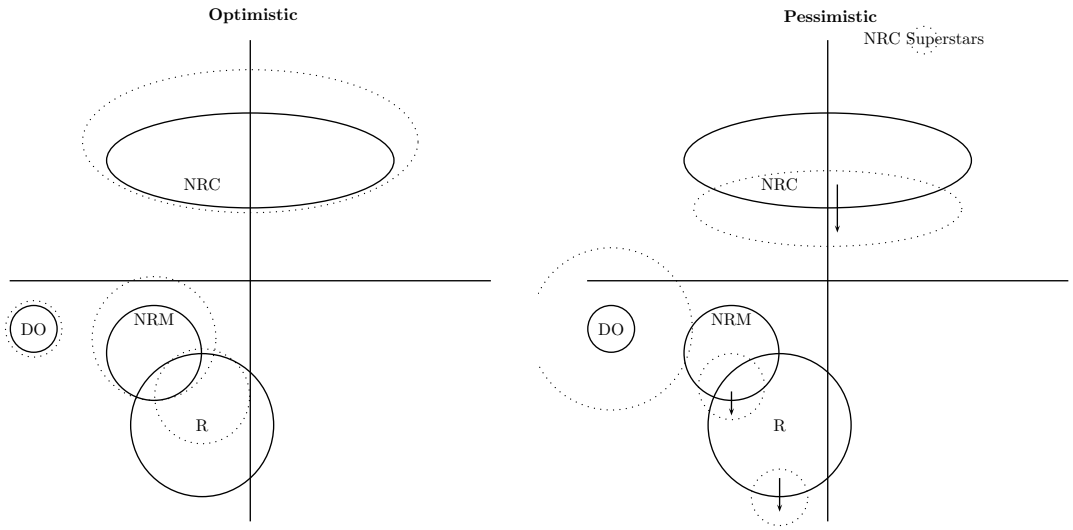

FIGURE 1.2: Political Consequences of Technological Change: Outlook

The more pessimistic outlook primarily differs from the optimistic story in its appraisal of the capabilities of new computer technology in the foreseeable future. The bleakest perspective basically expects almost any kind of work, or at least a large part of the tasks constituting a job, to become susceptible to automation. Except for a comparatively small group of winners, that is "superstars", in the highly skilled and specialized non-routine cognitive domain, *all* task groups would be confronted with structural decline, resulting in rising unemployment rates and massive wage competition for the remaining jobs accessible

to non-superstars, i.e. most citizens. Inequality is high in this scenario and concentrated in urban areas as rural regions provide only scarce employment opportunities and are thus increasingly less densely populated. In political terms, widespread decline in both relative and absolute terms would lead to widespread resistance against cultural change and economically left-wing policies. The continuing absence of left-authoritarian parties in Western Europe would be surprising in this scenario. However, the funding of a welfare state to support the masses of deprived citizens is delicate in a context of widespread vulnerability and high levels of inequality as the tax base depends on a small, influential and geographically mobile elite.

Unsurprisingly, the most likely scenario will lie somewhere in between the optimistic and the pessimistic outlook. What is certain, however, is that the path to one or the other scenario is far from completed and will continue to produce societal and political disruptions in the foreseeable future. Even if the employment structure will at some point resemble the optimistic outlook, considerable parts of society will struggle to adapt to increasingly high demands in terms of cognitive skills. I see upgrading as a positive process over generations or cohorts but not necessarily for individuals who have already entered the labor market. On the way to a new, more or less prosperous equilibrium of the labor markets, a large part of society will be confronted with insecurity and uncertainty about the future. And, these anxieties will most likely provide a solid electoral base for political parties that claim to oppose cultural change and economic modernization.

Based on the argument and findings of this dissertation, it would be astonishing to see a quick disappearance of right-wing populist parties. Fundamental transformations of the labor market with increasing demands to meet the requirements of a highly computerized world of work cause frictions and the potential for political exploitation. Depending on the precise contours of this transformation and the proportions of absolute versus relative economic decline, we might even see a strengthening of the culturally conservative political pole by the emergence of parties combining particularist stances with more pronounced left-

wing policies that go beyond what some existing parties provide under the label of welfare chauvinism.

The crucial point when studying technological change from a political science perspective is that job automation is rarely a Pareto improvement (Frey et al., 2017). This means that no matter how positive the overall picture, for example in terms of employment rates or aggregate wealth, some parts of society will always lose out because their skills suddenly become obsolete. Re- or up-skilling is a solution over generations but does not always work within an individual employment biography. Depending on the size and electoral relevance of the losers, the distributive implications of technological change do have the potential to significantly shape political outcomes nowadays and perhaps even more so in the near future. The transformation of Western European countries into highly computerized post-industrial societies is far from complete. The spread of new technology will continue to fuel distributive conflicts with serious implications in the political sphere. Decision makers and governments face the task of distributing the gains of technological progress in a manner that benefits a large part of society. This is a challenging and complex task because much of the existing tension stems from relative economic decline, which is not satisfied simply by expanding social security. The inefficiency of economic or material remedies to anxieties that are an inevitable companion of a profound transformation of the world of work is a huge strategic advantage for populist parties that thrive on emphasizing the political elite's difficulty in responding to growing anxieties rather than providing actual responses and concrete remedies.

2 Economic Hardship and Turnout: A Reference Point Approach

Abstract

Political reactions to individual economic hardship are at the heart of political science. Research on this relationship has gained new attention in the course of the Great Recession but results are rather mixed. The effects on turnout, an elementary component of any study on citizen's response to hardship, are particularly controversial. The article argues that much of this controversy is due to overly simple absolute measures of economic conditions and the neglect of social and historical reference points in performance evaluation. Based on research in social psychology and behavioral economics, I develop a broadly applicable measure of *relative* economic grievances and demonstrate its value added with a substantive application focusing on political participation. Using EU-SILC and CSES data, an empirical analysis shows that different dimensions of comparison have very different behavioral implications. While economic hardship relative to others demobilizes citizens, an increase in hardship relative to previous conditions mobilizes individuals. These counteracting forces remain concealed when relying on traditional indicators of economic conditions. A reference point approach to economic grievances thus considerably improves our understanding of mass politics in hard times.

Acknowledgments

I would like to thank all the participants of the Cortona Retreat 2017 and in particular Macarena Ares for very helpful comments on this and earlier versions of this paper.

2.1 Introduction

The relationship between economic conditions and political behavior has always been of great interest to pundits and the broader public alike. It stands to reason that the most recent economic downturn has done no harm to this research agenda. The already voluminous literature on economic voting has been supplemented by a whole series of new publications investigating the political repercussions of the Great Recession (e.g. Kriesi, 2012; Bermeo & Bartels, 2014; Lindvall, 2014; Lindgren & Vernby, 2016). While the details are far from settled, most contributions agree on the fact that the economy does substantially affect elections - usually to the detriment of the incumbent party (Achen & Bartels, 2016). Interestingly, much less is known about the arguably preceding decision of taking part in the election at all. The existing literature is characterized by fundamental theoretical disagreement on whether adverse economic conditions mobilize or demobilize citizens and has produced conflicting or null findings (Carreras & Castañeda, 2016). The focus on party choice and concurrent neglect of turnout is surprising given the crucial difference mobilization often makes. While party switching among active voters is relatively rare, activating undecided, potentially abstaining voters is much more likely (Lazarsfeld et al., 1948). Weschle (2014) showed that substantial parts of economic voting indeed happen through changes in participation rates as a response to adverse economic conditions. Understanding the relationship between the economy and turnout is therefore a central piece to any assessment of the political repercussions of economic crises.

I argue that the theoretical disagreement as well as the inconclusive findings of existing research dealing with this relationship is rooted in an often superficial understanding and measurement of the explanatory variable, economic hardship. The literature has been particularly blind to the implications of *relative* changes in economic wellbeing. Yet, without applying a reference point, it is hard to decide what is good or bad performance (Olsen, 2017). I will derive two relevant dimensions of comparison, which have been proved influential in social psychology and behavioral economics and may be similarly important when it

comes to individual political responses to economic hardship: social and historical reference points. Each kind of comparison introduces a distinct element of relativeness to someone's economic standing and is thus likely to trigger district behavioral reactions.

The importance of social comparisons stems from the fact that economic ups and downs have very heterogeneous distributional implications. The burdens of economic downturns are not carried equally and have differential impacts on different subsets of the population. The same applies in periods of economic growth: some citizens benefit much more than others. Capturing differential economic trajectories requires the researcher to look at disaggregated material conditions. However, in the turnout literature, heterogeneous economic fortunes are often disregarded, most obviously in research that relies on measures of aggregate economic conditions like national growth rates.

The second dimension of relativeness is related to temporal dynamics, i.e. changes in economic conditions over time. It is well-known that humans strongly dislike material degradation, irrespective of the absolute level of a given reference point (Kahneman & Tversky, 1979). An increase in hardship might be intimidating even though the absolute level of well-being would not seem to be cause for concern. Such intimidation stemming from a change in economic conditions is a plausible source for frustration (Barnes et al., 1979), which in turn could provoke political reactions quite different from the experience of long-term structural disadvantage.

As a motivating example for the importance of distinguishing between level of and change in economic hardship, Figure 2.1 presents local authority district-level data from the United Kingdom European Union membership referendum ("Brexit") in June 2016.[1] The two figures on the left hand-side show correlations between the *level* of local unemployment rates and turnout and leave share, respectively. The two figures on the right hand-side instead plot *changes* in local unemployment rates between 2004 and 2016 on turnout and leave share. The differences are striking: while higher unemployment rates, which tend to

[1] Unemployment Data from Annual Population Survey. Local referendum results from the UK Electoral Commission. N=381 (Local Authority Districts, Northern Ireland excluded).

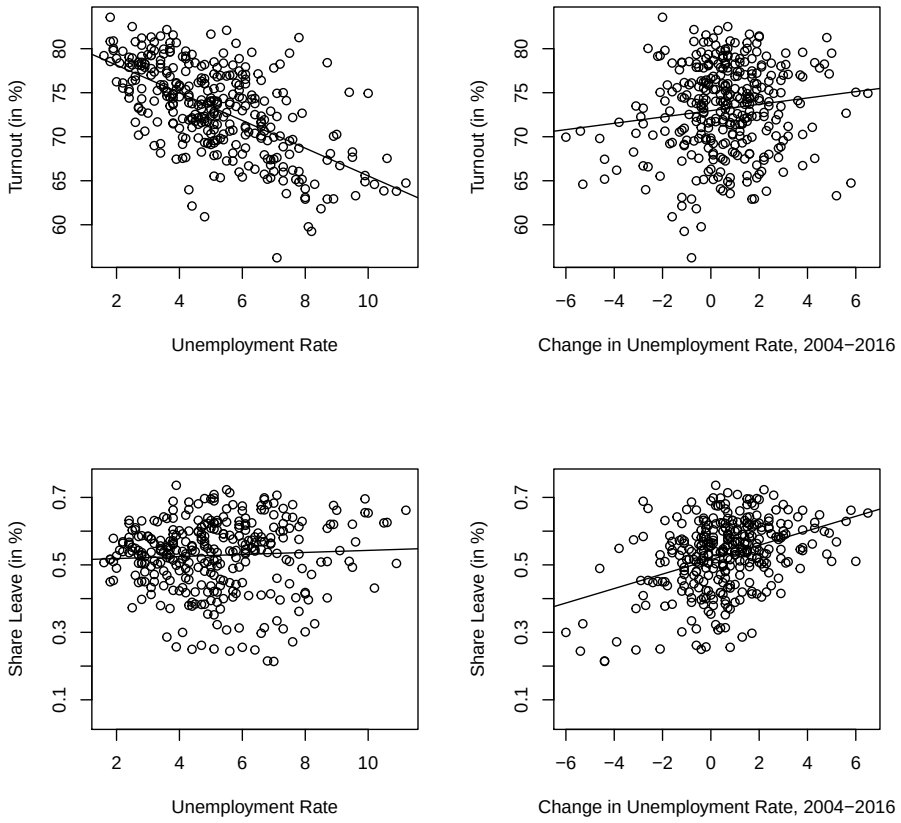

FIGURE 2.1: Unemployment and Brexit

reflect structural disadvantages of specific areas, are associated with clearly lower turnout level, an increase in unemployment rate on any level is related to higher turnout. The results with regard to the decision how to vote are similar: Local unemployment rates are a weak predictor of supporting Brexit but an increase in economic hardship over time correlates with higher shares of leave voters. The pattern displayed in Figure 2.1 reflects the very distinct experience of an increase in (or even first occurrence of) economic pressure on any level as opposed to the experience of long-known structural economic disadvantage. The behavioral implications of these distinct patterns have been amply studied in social psychology but often neglected in the empirical measures commonly used in political science contexts in general and research on political participation in particular.

To be sure, there is a long-standing literature on the impact of economic grievances on revolutionary activity. Most notably, Ted Gurr (1970) has explicitly and extensively theorized how frustration stemming from relative deprivation might lead to political violence. However, his careful discussion of relativeness and social comparison has often got lost in empirical applications with regard to both unconventional and conventional political participation. In the turnout literature, reference to Gurr's work is often made rather vaguely when discussing all kinds of economic determinants of voting ranging from inequality (Anderson & Beramendi, 2012) to dissatisfaction with one's employment situation (Gallego, 2007).

This paper makes three contributions. First, following a discussion of the relevant literature, I derive the central properties of a meaningful conceptualization of adverse economic conditions that takes into account established findings from social psychology and behavioral economics. In a second step, I transfer these theoretical insights into a generic and widely applicable measure that captures the fundamental dimensions of social comparison and results in two distinct forms of economic grievances. An empirical application of this measure finally demonstrates the value added by re-assessing the relationship between economic adversity and political participation. The refined, more precise measure of economic hardship sheds light on the longstanding puzzle of conflicting findings by revealing the counteracting forces of structural economic disadvantage (level) vs. deprivation over time (change).

2.2 Literature

The relationship between economic hardship and political behavior is at the heart of political science. It has, arguably, figured most prominently in the social movement literature, where economic grievances have long been seen as a root cause of political unrest (e.g. Geschwender, 1968; Gamson, 1968; Gurr, 1970; Hibbs, 1973). Grievances, rather imprecisely defined as "troublesome matters or conditions, and the feelings associated with them" (Snow, 2013), are understood to create resentment, which in turn produces a just cause for complaint

and active reaction. In this reading, grievances are almost synonymously used as mobilizing forces that trigger political action and oftentimes provide the "motivational impetus" (Snow, 2013) for the formation and activation of social movements.

A very different perspective on the relationship between economic adversity and political participation is provided by studies based on the socio-economic model. This strand of literature amply demonstrated the empirically powerful relationship between lower socio-economic status and lower political activity (e.g. Verba & Nie, 1972; Milbrath & Goel, 1977). The actual mechanisms linking socio-economic background and political participation have later been specified in the so-called resource model with reference to material and non-material resources on a higher level of abstraction, e.g. time, money and, in particular, civic skills. Voters with lower socio-economic background tend to select into occupations and organisations that hamper the acquisition of such skills and therefore participate less in politics (Verba et al., 1995). In stark contrast to grievance theory, economic disadvantage is expected to result in abstention and demobilization rather than political activation.

Grievance theory and the socio-economic model therefore offer very different theoretical expectations and have resulted in a decade-long debate on the political consequences of economic downturns. More than 30 years ago, Rosenstone (1982) summarized these contradictory perspectives with three competing hypotheses as to how the experience of economic hardship affects individual political reactions: mobilization, withdrawal or no effect. While the idea of mobilizing grievances largely failed to prove its explanatory power in empirical work and fell increasingly out of fashion over the years[2] (Gurney & Tierney, 1982), the common incidence of economic hardship and political upheaval in the wake of the Great Recession revived the debate and brought grievance theory back into the academic spotlight. Renewed scholarly interest triggered a wave of interesting empirical evaluations (Rüdig & Karyotis, 2014; Bernburg, 2015; Kern, Marien & Hooghe, 2015; Grasso & Giugni, 2016),

[2]Norris' influential idea of "critical citizens" is a notable exception to the increasing disregard of hardship as a mobilizing force. She maintained that anger and dissatisfaction with government "may spur civic engagement as much as disengagement". Insofar, elections can be seen as a "safety-valve to 'throw the rascals out'"(1999, p. 25).

which, however, reproduce contradictory findings of earlier research and could not settle the debate.

One likely culprit for conflicting results regarding the impact of economic grievances is the elusive and multifaceted nature of the concept. Unsurprisingly, this results in a confusing number of different measures, each focusing on slightly different aspects of economic hardship. The above-mentioned studies, for example, rely — among other factors — on subjective perceptions of past and future economic situation (Rüdig & Karyotis, 2014; Grasso & Giugni, 2016), perceived economic loss compared to other parts of society (Bernburg, 2015) or on individual satisfaction with the state of the economy and one's own income (Kern et al., 2015).

While these are all interesting and potentially relevant measures of individual economic hardship, what seems to be missing is a systematic discussion of the central reference points highlighted by the explanatory variable and the political implications of emphasizing one or the other. All to often, these very properties are determined by the phrasing of the specific survey item used and are not given much thought. This is surprising in the light of the huge attention that has been directed to the distinct behavioral implications of differently framed economic experiences in fields like social psychology or behavioral economics (Simon, 1939; Kahneman & Tversky, 1979; Roels & Su, 2014; Olsen, 2017). Crucially, taking reference points into account opens up the possibility of going beyond traditional measures of absolute economic wellbeing and instead studying the explanatory power of relative changes in economic standing.

The idea of reference points and relative assessments of economic conditions has found its way into different fields of political science research in recent years. The economic voting literature, for example, has been enriched by the idea of international benchmarking. What matters is not only or not primarily the "autarkic" economic performance during a government period but domestic growth rates compared to those of other comparable countries (Kayser & Peress, 2012) or compared to domestic growth rates in the past (Aytaç, 2017).

Similar ideas are reflected in research studying individual political responses to economic hardship, which explicitly introduces the economic context as moderating variable. Incantalupo (2012), for example, argues that being unemployed in a high-unemployment context will mobilize citizens because joblessness is seen as a societal rather than a private, self-imposed problem, while it demobilizes those unlucky individuals who are unemployed in times of general economic prosperity. With regard to vote choice, Burgoon and Rooduijn (**?**) find that economic disadvantage is associated with radical political responses in particular when the overall economic conditions are favorable. If everyone else is thriving, individual hardship is especially unsettling and thus results in more extreme political reactions. Both examples highlight the significance of theorizing and explicitly incorporating the relevant societal reference points when assessing the impact of economic adversity on political behavior.

A reference point approach to economic grievances brings relative shifts in wellbeing front and center. I will demonstrate that explicitly modelling the relevant dimensions of comparison is as consequential in the domain of political participation as in many other domains of human behavior. While long-standing structural disadvantage related to social comparisons demobilizes citizens, a relative increase in hardship on any level is associated with emotions that have the exact opposite effect and increase turnout. A more fine-grained conceptualization of economic grievances thus adds important nuance to the vast literature on political reactions to material hardship.

2.3 Theory

Social comparison has long been recognized as a powerful driver of human behavior and a pervasive motive behind individual satisfaction (Wood, 1989). Everyday life offers countless illustrations and make the concept intuitively appealing. Marx (1847, cited in Suls & Wheeler, 2000) provided a famous example more than 150 years ago: "A house may be large or small. As long as the neighboring houses are equally small, it satisfies all social

demands for dwelling. But let a palace reside beside the little house, and it shrinks from a little house to a hut."

The theory of social comparison has first been systematized in social psychology by Leon Festinger (1954). The basic thrust of his early work was that comparisons with other people are pivotal to self-evaluation of abilities and opinions. Although interest in the theory has waxed and waned over time, social psychology research has extended the scope of the concept considerably and provided applications to personality characteristics, emotions or group processes (for reviews, see Wood, 1989; Suls & Wheeler, 2000).

Comparison processes are central to another prominent theory in social psychology, which is of particular importance for the study at hand: relative deprivation. Relative deprivation research does not focus on the comparison of personal characteristics but on the comparison of outcomes, for example wages (Wood, 1989). The terminology goes back to a large-scale social-psychological study on American soldiers during the Second World War (Stouffer, 1949). No rigorous definition has been provided but the authors emphasized that the intuition behind the concept is immediately apparent. Walter Runciman, an influential theorist of relative deprivation, introduced his subject of study as a "familiar truism" with many examples readily available from everyday life (Runciman, 1966). He, too, avoided a strict definition but provided the following characterization: If an actor A does not have x but wants x and makes the comparison to B, who does have x, A is relatively deprived. Ted Gurr (1970), another defining scholar of relative deprivation, more explicitly emphasized the oftentimes dynamic nature of these comparisons. Relative deprivation is described as a discrepancy between "value capabilities" and "value expectations", which emerges in different ways over time.

At the core of this concept is the observation that satisfaction or aggravation with economic outcomes has less to do with the absolute level of hardship than with the salient standards in someone's social setting (Wood, 1989). The crucial implication is that traditional measures of economic adversity, e.g. based on income or unemployment status, might miss important

aspects regarding the political consequences of economic grievances. Being objectively well-off does not automatically bring satisfaction and being less well-off does not necessarily imply aggravation. Because deprivation is relative and depends on some standard of reference, those who are most deprived in an objective sense might not be the ones with the strongest economic grievances - and vice versa (Crosby, 1976).

Which are the relevant standards of reference, then? Perusing the literature shows that two distinct dimensions of comparison suggest themselves. Early on, research on performance evaluation has emphasized the importance of information on past experiences as well as the experiences of others. Accordingly, Herbert Simon (1939) coined the distinction between social and historical reference points. Along very similar lines, relative deprivation theorists some decades later agreed that "individuals can use themselves in the past, as well as others in the present" as a reference with whom to compare their present outcomes (Crosby, 1976, p. 89). The first highlights the dynamic nature of the concept and emphasizes the importance of temporal comparisons within subjects, while the latter is a social comparison between subjects. In studies on government performance and benchmarking, these two distinct dimensions of comparison are also referred to as internal and external reference points respectively (Foltin, 1999; Olsen, 2017).

Figure 2.2 illustrates how the inclusion of reference points add to our understanding of economic grievances. It displays three panels with stylized developments of some form of well-being x, say income, over time. The dashed lines represent three different economic trajectories for an actor of interest, A, while the solid line represents the development for a relevant reference group in the same time span. There are three different trajectories for actor A, identical across panels (a), (b) and (c), which are deliberately designed to return the same absolute value at time point t_1. In all nine scenarios (three trajectories in each of the three panels), A's level of income x at t_1 is equal to 4. Studying absolute levels of income, that is, ignoring questions of relativeness, one would expect A to behave identically in all nine scenarios. However, the stylized trajectories in Figure 2.2 suggest differently.

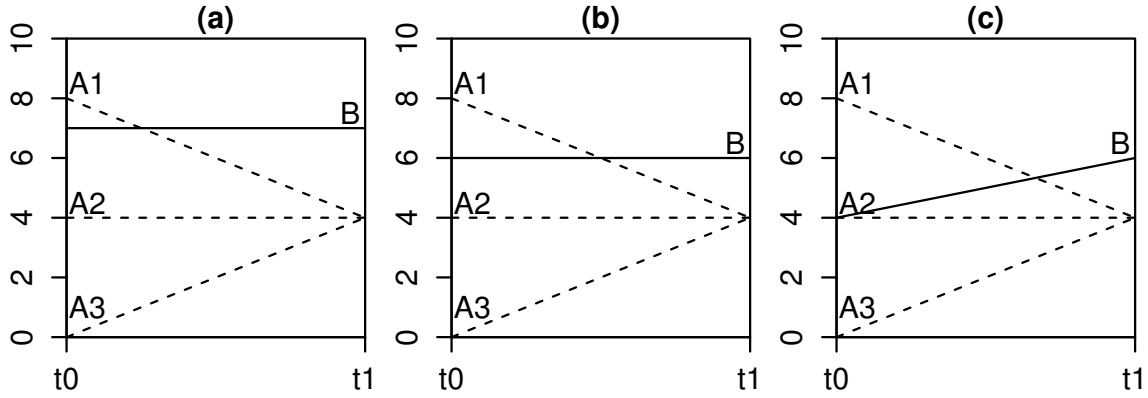

FIGURE 2.2: Stylized Well-Being Trajectories of Actor A and Reference Point B

Social reference points are highlighted by comparing the situation in t1 in panel (a) and (b). Despite identical endowments with income x, A's x=4 are likely to feel better in (b) than in (a) because the distance to the relevant group of comparison is smaller. In relative terms, A is worse off in the left panel compared to the middle panel.

The implications of historical reference points are visible within each panel. A3 will always feel better with its x=4 at t_1 than A1 because the latter is used to much higher levels of well-being from t_0, while x=4 at t_1 is a significant improvement in A3's situation compared to the previous time point.

Finally, taking relativeness seriously also implies that A will perceive any of its displayed trajectories more positively in situation (b) than in situation (c) because the relative distance between both groups increases in (c) to the detriment of A despite identical absolute levels and distance between the actor of interest and its reference group in t_1. This is particularly visible in the case of A2, whose situation never changes between t_0 and t_1 and yet experiences a deterioration in relative terms in panel (c).

The crucial insight for the argument of this paper is that a focus on absolute levels of economic well-being or hardship might conceal important differences in *relative* well-being with respect to both social and historical reference points. What is more, explicitly differentiating between the relevant dimensions of comparison might reveal important nuances in the way

economic grievances affect political reactions since the two are at least partly independent and do not necessarily go hand in hand. An individual might experience a painful decrease in well-being and yet still be better off than its salient standard of reference.

2.4 Measurement

The aim of this section is to propose a generic and widely applicable measure of economic grievances that captures the core components of the literature on social comparisons without being overly complex and demanding in terms of data requirements. To be clear, such a broadly applicable measure will never do justice to all the the nuances and depth of the concept as discussed and debated in social psychology. The benefit of applicability will undoubtedly come at the cost of a loss of subtlety. And yet, the empirical implementation of reference groups is expected to create valuable middle ground between the detailed discussion in social psychology and the sheer disregard in much of the existing empirical work on political participation.

The two relevant dimensions of comparison, social and historical, have a straightforward translation when it comes to operationalization. The between-subject element emphasizes the comparison people make when they relate their own (group's) situation to other parts of society. An hourly wage of 10 Euros means something very different in a country with a minimum wage of 5 Euro/hour than in a country with a minimum wage of 10 Euro/hour. This dimension of comparison is empirically captured by contrasting an individual or group's economic conditions to those of a suitable comparison group.

The focus of the second relevant dimension of comparison is on temporal dynamics and highlights the important feature of experiences, which in turn create expectations: An hourly wage of 10 Euros is much more satisfying if I earned 8 Euros per hour in my previous job than if I earned 12 Euros before. This dimension of comparison is operationalized by calculating within-subject differences over time.

As a final option, one could think of combining both defining dimensions of comparison. The positive or negative change in grievances in one group of interest is contrasted to the change of this very same grievance in a comparison group during the same time span.

Complementing absolute conditions with either one or both dimensions of comparison results in four different versions of economic grievances, which I label status, relative status, deprivation and relative deprivation, respectively, to highlight the dominant dimension of social comparison. Figure 2.3 provides a graphical overview.

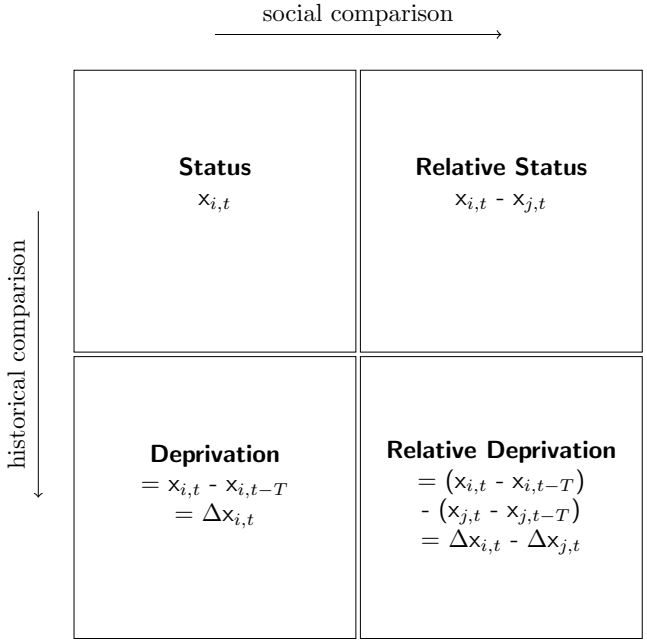

FIGURE 2.3: Theoretical Overview: Grievances

The definition of the four possible versions of economic grievances is purposely kept in the most general form to demonstrate the generic applicability of the concept. Depending on the research question at hand, the relevant parameters for one or several of the presented measures may be appropriately defined and filled with meaning. In the following, I will briefly discuss different options, important properties and potential stumbling blocks of each parameter.

- actor i: Generally, the group of interest, actor i, can be chosen freely. It could represent an individual, a group of individuals (e.g. occupational groups, income groups, firms, ...) or an entire country.

- actor j: The relevant reference group, actor j, is arguably the most difficult parameter to define. A vast literature in social psychology has demonstrated that different social comparisons can have very different behavioral implications (see, e.g. Hyman, 1942; Merton & Rossi, 1957; Suls & Wheeler, 2000). It is way beyond the scope of this paper to attempt to do justice to this extensive literature but at least four aspects should be kept in mind. First, the difference between upward and downward comparison. Given the research question, would actor i rather make a comparison with someone better off or someone who lags behind? Second, the difference between comparing to someone similar (adjacent rank) or someone dissimilar (nonadjacent rank) (Suls & Wheeler, 2000). Third, the question of whether actor i feels relatively deprived because of his group's position in society (fraternalist) or because of his own position within this group (egoist) (Runciman, 1966). And fourth, related to the three previous aspects, the number of reference categories: Does every subgroup of interest compare its own performance to one and the same standard of reference or do they differ between groups? In addition, a pragmatic but important aspect of choosing a reference group for empirical purposes is observability of actor j's level of grievance. If it is unlikely or even impossible that actor i knows at least approximately about actor j's level of grievance, the whole concept falls flat.

- grievance x: The choice of the relevant economic fundamental underlying the grievance variable depends on the researcher's interest. Generally, the concept lends itself to applications with objective economic data as the crucial subjective or relative component of the concept is implemented by explicitly modelling the dimensions of comparison. An obvious candidate for x would be income. Contingent upon actor i's unit of analysis, this could be individual income, an occupational group's median income or a country's gross domestic product.

- time lag T: The time span within which temporal within-subject changes are studied is flexible and adjustable to context. Given oftentimes myopic retrospection of individuals (Achen & Bartels, 2016), T might be a relatively short lag of, for example, one year. But the concept is equally applicable to longer time spans, for example business cycles or periods of government.

Finally, the different options in terms of calculation of relativeness deserve some attention. In the definition provided above, social comparisons are represented by subtracting actor j's grievance or actor i's previous grievance from actor i's current grievance level. It should be noted that a closely related measure could be generated by division, which results in percentage changes instead of absolute changes. Depending on the research focus and the distribution of the relevant grievance x, one might prefer one over the other. Percentage values tend to give more weight to changes on lower levels of x, while absolute values emphasize larger absolute changes, usually on higher levels of x.

2.5 Application

The substantive focus of this paper is on the impact of economic grievances on political participation. Although much has been written about this relationship, the current literature (e.g. Kern et al., 2015) continues to struggle with the antithetical expectations already brought forward in early accounts on the turnout implications of economic adversity (e.g. Rosenstone, 1982). I will argue and demonstrate that applying both of the discussed dimensions of comparison is informative in that respect because of the different behavioral implications of absolute as opposed to relative economic adversity. Bringing in the aspect of social and historical reference points helps reconcile the contradictory perspectives dominating the existing literature. The economic shock of the financial and economic crisis almost ten years ago and the following Great Recession with very distinct paths of recovery between and within countries provides an interesting test case to re-assess the long-standing debate

whether — or, more precisely, under what conditions — economic grievances politically mobilize or demobilize citizens.

2.5.1 Theoretical Expectations

The discussion of the psychological and economic literature above showed that social and historical reference points crucially affect the (self-)evaluation of economic performance. As a consequence, a focus on absolute levels of well-being might conceal important aspects of the relationship between economic grievances and political participation. The following paragraphs offer a brief discussion on why an emphasis on distinct reference points suggests distinct political reactions.

Social reference points emphasize relative differences in economic hardship between different subgroups of society. The general pattern of vertical rank orders is rooted in longstanding and systematic discrepancies in resource endowment between individuals or groups and thus relatively stable over time. Clearly, such structural disadvantage is closely related to the arguments of the socio-economic model, an empirically powerful approach claiming that lower socio-economic status results in lower political participation (Verba & Nie, 1972; Milbrath & Goel, 1977; Wolfinger & Rosenstone, 1980). A recent re-evaluation of the propositions of these classic studies indeed confirmed sustained turnout gaps between different socio-economic groups, in particular between rich and poor (Leighley & Nagler, 2014). One of the main channels through which SES is translated into political (in-)activity are civic skills acquired in occupational environments (Verba et al., 1995). In addition, research in social psychology sheds light on the psychological underpinnings of the link between unfavorable social reference points and political inactivity. The long-term stability of material inequality within countries conveys the impression of unalterable conditions. Disadvantaged individuals might get used to their unfavorable position and to some extent accept them as inescapable. The learned helplessness hypothesis argues that individuals' motivation to actively respond to aversive events wanes when conditions are perceived uncontrollable

(Maier & Seligman, 1976). The subject learns that individual behavior and outcome are independent and reacts with apathy rather than upheaval.

Historical comparisons deliver a very distinct kind of reference point. Deprivation over time can happen on any level of absolute economic hardship, is much more volatile and affects a much broader and more diverse subset of society. It is therefore weakly correlated with socio-economic status and due to its volatility certainly not considered as naturally given and unalterable. Hence, the experience of deteriorating economic conditions over time is not so strongly related to resources, the first pillar of political participation famously proposed by Verba et al. (1995), but rather to the second pillar: motivation or psychological engagement. The weak relation to absolute levels of resources does not prevent strong behavioral reactions. Seminal research at the intersection of psychology and economy has long demonstrated the firm human aversion to losses relative to same-sized gains (Kahneman & Tversky, 1979). People react strongly to negative departures from a posited reference point. And more recent research proposed that reference points are determined endogenously by the economic environment or, more precisely, by the beliefs an individual held in the recent past about the outcome (Kőszegi & Rabin, 2006). This assumption squares nicely with Gurr's (1970) conceptualization of deprivation as a discrepancy between value expectations and value capabilities, which results in a strongly mobilizing emotion: frustration. Much in contrast to the idea of learned helplessness, deprivation over time (net of absolute levels) is expected to produce a kind of dissatisfaction beneficial to political activity (Barnes et al., 1979).

In addition to the reasoning based on the frustration-aggression hypothesis, different patterns of blame attribution add to the expectation of mobilizing rather than demobilizing effects. External blame attribution is an important pre-condition for mobilizing grievances (Arceneaux, 2003). Given the comparison to more favorable conditions in the recent past, negative feelings resulting from deprivation are less likely to be self-attributed: if my former self was able to achieve better economic outcomes or lower levels of economic grievances and I have not purposely degraded my performance, blaming external forces stands to reason.

To sum up, my main expectation is that unfavorable economic conditions compared to other parts of society demobilize voters whereas unfavorable conditions compared to previous circumstances in the recent past mobilize voters. Social reference points (relative status) are more closely related to resource-based arguments, while historical reference points (deprivation) trigger political reactions on a more motivational basis. An increase in grievances is not tantamount to high absolute levels thereof — but still an intimidating experience provoking a response.

2.5.2 Operationalization and Descriptives

The following paragraphs discuss how I choose the parameters of the grievance measure for the substantive application. One of the most prominent and formative economic risks during the last decade has been joblessness. I will thus focus on the political implications of unemployment and thereby pick up a generation-old debate in political science that has recently regained steam (Schlozman & Verba, 1979; Rosenstone, 1982; Incantalupo, 2012; Aytaç, Rau & Stokes, 2016). In contrast to classic studies on the political implications of joblessness, I will focus on unemployment risk rather than unemployment status. Being unemployed or not is by definition a clear-cut difference without much room for questions of relativeness, whereas unemployment risk is a continuous measure of economic hardship, whose significance with regard to political attitudes has been amply demonstrated, most notably by the work of Philipp Rehm (2009; 2011) and colleagues (Rehm et al., 2012).

The choice of unemployment risk as economic grievance of interest constrains the options for the level of analysis regarding the central actor i. Following Rehm (2009), unemployment risk is measured as prevalence of joblessness within a group of interest. Actor i thus needs to be a collective entity. While Rehm calculated the risk of unemployment for occupational groups predefined by the International Standard Classification of Occupations (ISCO), I rely on the theoretically thicker aggregation of occupations into different occupational task groups largely following the classification by Oesch (2013, p. 156), which in turn is based on a

voluminous literature in labor economics highlighting the importance of the task content (as opposed to skills) of a job in the face of technological change, arguably the most important force shaping contemporary labor markets - in good and in bad times (Autor et al., 2003; Autor, 2013; Acemoglu & Autor, 2011; Spitz-Oener, 2006; Goos et al., 2014; Cortes, 2016). In essence, this literature argues that increasing automation and computerization first and foremost threatens routine jobs at any skill level. Routine jobs are dominated by potentially demanding but ultimately repetitive tasks, which follow explicit rules. And computers are particularly versed in accomplishing exactly these kinds of tasks, leading to a strong decline of routine jobs in the middle of the skill- and income-spectrum around the world. Unemployment risk is therefore operationalized as prevalence of unemployment within the five following occupational task groups: Non-routine cognitive[3], routine cognitive, routine manual, non-routine manual, non-routine service.

What is a reasonable reference point for these occupational task groups to compare their own unemployment risk to? While one could think of and theorize various upward or downward comparisons between different groups, I rely on the simple reference of the national unemployment rate. This is primarily for reasons of visibility. The national unemployment rate is a widely publicized figure that most individuals get in touch with from time to time and, thus, can relate to their own unemployment risk. While citizens might not know exactly about the unemployment rate within their occupational group, it seems feasible to at least tentatively relate their own daily experience with the condition of the national economy reported in the media. If, for example, the national economy is recovering and unemployment rates therefore decrease, individuals will most likely be able to judge whether this is in line with what they see and experience in their own occupational environment. With regard to the temporal comparison, finally, one has to choose the relevant time lag T. Following the large literature emphasizing the rather myopic minds of voters (e.g. Bartels, 2008; Achen & Bartels, 2016), I will look at one-year changes in unemployment risk.

[3]This group combines the two high-skilled non-routine groups defined by Oesch (non-routine analytical and non-routine interactive), which I could not sufficiently separate based on the 2-digit ISCO codes provided by EU-SILC data.

From these parameters, I create two measures of economic grievances as discussed above, each capturing one of the decisive dimensions of comparison. It should be noted that the choice of only one single reference group - or actor j - for each occupational task group - or actor i - is consequential in that the combination of the two dimensions is not sensible. Status and relative status as well as deprivation and relative deprivation will represent functional equivalents within a country. Relative deprivation is equal to deprivation $\Delta X_{i,t}$ minus the term $\Delta X_{j,t}$, which in the current case represents the change in the national unemployment rate — a constant within a country-year. The subtraction of one constant parameter is nothing else than a linear transformation of the same type of grievance without subtraction. The four different kinds of grievances introduced above collapse into two forms within a country: level and change.[4] If a researcher decides to look at a more complicated structure of reference points, the four kinds of grievances will be maintained. For example, one could think of a more dynamic upward comparison (see Wood (1989) for a more detailed discussion), in which each occupational group compares its own unemployment risk to the one of the closest better-off occupational group. As every actor i relates its own grievances to a different actor j, the comparison group would vary, thus not represent a constant within a country-year and the operationalization would result in all four types of grievances. However, such a setting requires actors to have extremely detailed knowledge on occupation-specific unemployment risks, which in many cases will be difficult to justify.

To sum up, the following Table 2.1 displays the translation of each abstract parameter discussed in the previous section into the concrete values suggested above. The result are two different measures of economic grievances, one emphasizing social comparison (level), one emphasizing historical comparison (change).

In order to get a more concrete sense of the range, values and variance of the resulting variables, the following figures provide a descriptive overview of the above-developed concept. Figure 2.4 and 2.5 display the development of economic grievances during the last decade

[4] In a between-country analysis, however, the subtraction of the national unemployment rate will help make cases more comparable by eliminating level effects of unemployment rates between countries or regions.

TABLE 2.1: Operationalization

Concept	**Denotation**	**Operationalization**
economic grievances	x	unemployment risk
group of interest	i	occupational task group based on Oesch's (2013) classification
reference group	j	national average across all task groups
time lag	T	one year
relative status	$x_{i,t}$ - $x_{j,t}$	unemployment risk for task group i contrasted to average unemployment risk in the same country
deprivation	$x_{i,t}$ - $x_{i,t-1} = \Delta x_{i,t}$	one-year change in unemployment risk for task group i

in one country hard-hit by the Great Recession (Spain) and one country where the impact of the crisis was felt to a much lesser degree (Germany).

The left panel in Figure 2.4 shows group-specific unemployment rates. Two aspects are noteworthy. First, the outbreak of the financial crisis in 2008 left conspicuous marks on Spanish labor markets and led to strong and immediate surge in unemployment rates. Second, the crisis accelerated trends that already existed and primarily reinforced differences in levels between groups. Those who already suffered from higher unemployment levels before the crisis are also those who experienced the strongest increase in grievances. This divergence is highlighted in the middle panel, which displays relative status, that is group-specific unemployment rates normalized by the average level of joblessness. Being above the red zero-line indicates that this occupational group suffers from disproportionate (or above-average) levels of economic grievances. In Spain, non-routine manual jobs, often in the construction sector, clearly belong to the main losers of the Great Recession when looking at absolute levels of hardship.

Looking at changes in hardship adds important nuance to this picture. As soon as we get rid of mere level effects by the virtue of subtraction, the comprehensive nature of the

financial crisis in Spain becomes visible. Virtually all occupational groups experienced two peaks of hardship with strong increases in unemployment rates, once at the onset of the financial crisis in 2008 and once when the financial crisis turned into a full-blown economic crisis (Eurozone crisis) around 2012. While the first shock primarily affected the housing sector and, thus, jobs in construction, the following Eurozone crisis led to a deterioration of economic conditions in all occupational groups. While the *level* of hardship differs strongly between groups, all of them have been similarly affected by a severe *increase* in unemployment.

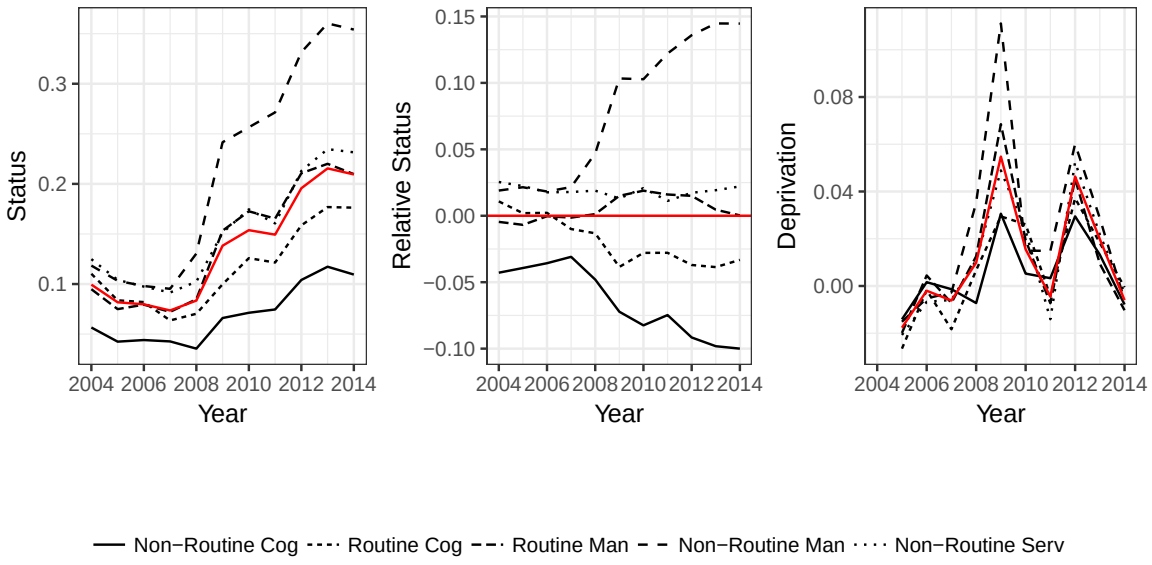

FIGURE 2.4: Economic Grievances (Example: Spain)

Germany, in stark contrast, seems almost unaffected by the global worsening of economic conditions from 2008 onward. Over the entire period between 2004 and 2014, the average unemployment rate even decreased. The disaggregation of the average unemployment rate in the left panel of Figure 2.5 shows that all occupational groups with the exception of routine manual workers benefited from a rather positive economic environment. Consequently,

we do not see the strong spread of group-specific unemployment rates as in Spain in the normalized middle right panel.

However, the panel on the right adds nuance to the generally positive picture. Unemployment levels have not massively increased among any occupational group but studying changes rather than levels of grievances highlights the unfavorable situation of manual routine workers. In a — despite the Eurocrisis — generally positive economic environment, German routine workers suffered from several consecutive years of increasing unemployment rates. Starting from moderate levels of unemployment, much lower than among low-skilled workers, the crisis disproportionately hit routine work, resulting in converging risks of joblessness. German routine workers are thus a nice illustration of the stylized patterns described in Figure 2.2: Absolute levels of grievances are likely to conceal equally important relative shifts in the economic fate of different groups of society.

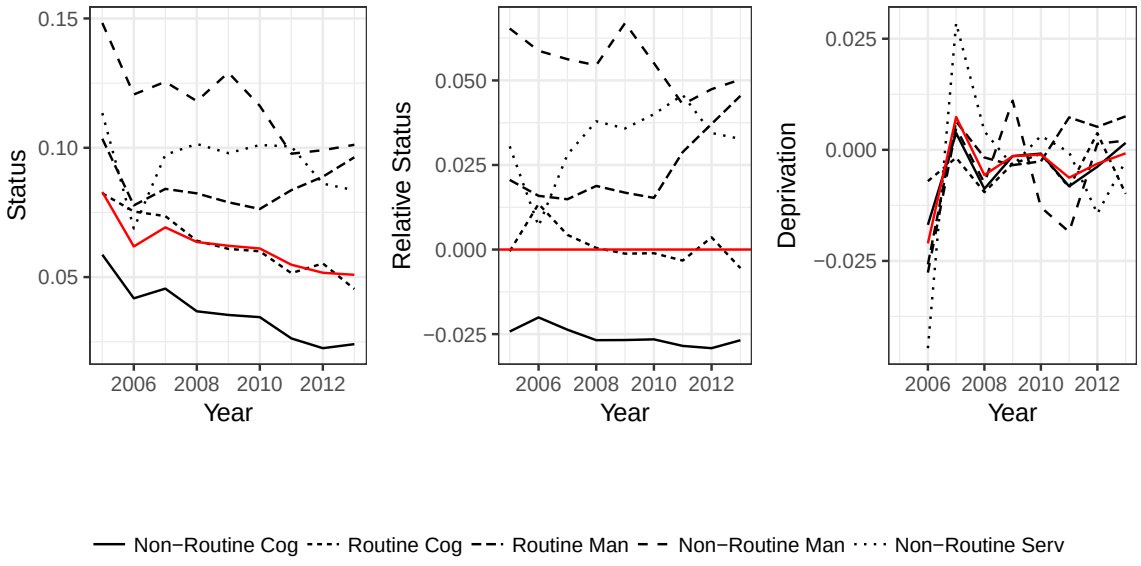

FIGURE 2.5: Economic Grievances (Example: Germany)

Disaggregation and comparison to other groups therefore allow for interesting insights into how specific individuals or groups fared during the Great Recession — in absolute and in

relative terms. These micro-level based information on hardship can also be translated into macro-level measures, which are informative to compare different patterns of hardship between countries. For example, mean and standard deviation of economic grievances could be used as indicators in macro-level applications of the concept.[5]

2.5.3 Data and Methods

The following empirical application is based on two different data sets. The main data source is the Comparative Study of Electoral Systems (CSES), a cross-national collection of post-election studies from around the world. This data set is well-suited to study turnout because it asks respondents about actual participation in the recent election instead of inquiring more abstract vote intentions as in many other available micro data sources. Beyond the dependent variable, the CSES provides important individual-level covariates to isolate the effect of the main explanatory variables. The models sequentially introduce demographic, socio-economic and personal characteristics that have been proved influential in previous studies on political participation. Table A1 in the appendix provides details on operationalization and descriptive statistics on all variables.

Economic grievances are measured following the operationalization discussed and displayed in the above. The two central indicators are relative status and deprivation, that is level and change in unemployment risk, directly related to either the average level of unemployment risk in the same country or the unemployment risk within the same group in the previous year. In order to calculate reliable estimates of unemployment by task group, I depend upon EU-SILC data, which provide very large individual-level samples with detailed information on labor market variables.

[5] Figure A1 displays country-specific densities of different kinds of economic grievances for Denmark, Ireland and Greece. This sample has been chosen for illustrative purposes because the crisis operated very differently in these three countries, which becomes visible when looking at the density plots. The very different distributions of grievances across countries allow for some speculation about political implications. In Greece, for example, the population is extremely polarized and hence strongly divided between very hard-hit losers to the right of the rather flat mode and hardly affected winners to the left — and fairly little middle ground, which potentially moderates political conflict.

Both measures for economic grievances are then merged with CSES data by country, election year and occupational task group. The classification into task groups is based on internationally standardized occupation codes (ISCO 2-digit) available in both data sets used for this analysis. The resulting data set covers 30 elections from 18 countries between 2005 and 2015 (see Table A2 for details).

In terms of empirical methods, the main models are based on linear probability models with fixed effects on the country-year level to account for country-level heterogeneity and adjust for period effects (Allison, 2009). I use linear models despite the binary coding of the dependent variable, political participation, for reasons of simplicity and more straightforward comparability of coefficients. The robustness of the models to logistic regression will be demonstrated. Furthermore, I rely on fixed effects models despite the hierarchical structure of the data (individuals nested in countries) for two reasons. First of all, the main interest of this analysis is on the universal individual level relationship between economic conditions and political participation regardless of the national context. While multilevel models are intended to *explain* country-level variation, fixed-effect models *control* for this variation. Multilevel models are limited with respect to the second purpose as they only control for those (few) country-level variables that can be included in the model (Möhring, 2012). Secondly, with only 18 countries or 30 elections available for this analysis, the number of level-2 units is rather low, thereby strongly restricting the options to exploit the full potentials of conventional multilevel modelling (Möhring, 2012; Stegmueller, 2013). That said, the robustness of the findings to a recently proposed multilevel specification suitable even with a limited number of level-2 units (Elff, Heisig, Schaeffer & Shikano, 2016) will be demonstrated. All models include population weights.

2.5.4 Results

Before turning to the results of the main analysis, we briefly assess the variance explained on the macro level. In the fixed-effects approach I follow here, the R^2 of a model without

individual-level covariates including only fixed effects is equal to the ICC of the empty multilevel model (Möhring, 2012). Accordingly, in the following models, the country-level explains 7.3 and the country-year-level (country dummies interacted with time dummies, applied in all models) explains 8.8 percent of the total variance. This share is very similar to the numbers reported in other studies (see e.g. Kern et al., 2015) and indicates that the largest part of variation in political participation is found on the individual level.

Table 2.2 displays the results of the relationship between individual economic grievances and political participation. Note that the two main explanatory variables, relative status and deprivation, are coded such that higher values mean higher values of grievances, i.e. either higher relative unemployment risk or an increase in unemployment risk over time, respectively. Models 1-3 deal with relative status, that is relative level of grievances, and Models 4-6 show the results with regard to deprivation, that is change in grievances over time. Models 4-6 include both grievance variables in order to capture the effect of deprivation net of the absolute level of grievances. In line with both the initial figure motivating this paper and the theoretical expectations formulated above, we see that differentiating between more long-term structural disadvantage and more short-term deterioration of conditions on any level is crucial to understand the link between grievances and participation. While relatively higher *levels* of grievances decreases participation in elections, a relative *change* (increase) in grievances has exactly the opposite effect and mobilizes citizens.

This finding is very stable and robust to the inclusion of additional determinants of political participation. Model 1 and 4 include basic demographic and socio-economic variables. The coefficients show the expected sign: participation increases with age but the negative effect of the squared variable indicates diminishing marginal effects at an older age. Women tend to participate slightly less than men, and higher socio-economic groups in terms of education and income participate more. Model 2 and 5 add personal characteristics about the type of residence (rural or urban), which turns out to be of little influence on turnout, and political information, which is strongly associated with higher probabilities to go to the polls. Model 3 and 6, finally, include an even more conservative test by adding respondent's

actual unemployment status. It should be noted that the inclusion of unemployment status considerably alters the underlying sample as this variable is coded only for respondents in the active labor force. Still, the general thrust of the results is not challenged by this extended model. All in all, neither magnitude nor significance of the effect of economic grievances is substantially affected by the inclusion of various confounders.

TABLE 2.2: Economic Grievances and Political Participation

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Rel. Status (unemp)	-0.911^{***}	-0.746^{***}	-0.676^{***}	-1.214^{***}	-1.062^{***}	-1.066^{***}
	(0.071)	(0.071)	(0.087)	(0.082)	(0.082)	(0.102)
Deprivation (unemp)				1.244^{***}	1.225^{***}	1.179^{***}
				(0.280)	(0.279)	(0.341)
Age	0.010^{***}	0.009^{***}	0.011^{***}	0.011^{***}	0.009^{***}	0.010^{***}
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Age sq.	-0.000^{***}	-0.000^{***}	-0.000^{***}	-0.000^{***}	-0.000^{***}	-0.000^{***}
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Female (0/1)	-0.011^{**}	0.008^{*}	0.013^{**}	-0.006	0.014^{***}	0.017^{***}
	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.005)
Education (1-9)	0.012^{***}	0.007^{***}	0.008^{***}	0.010^{***}	0.005^{**}	0.006^{***}
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)
Income (1-5)	0.025^{***}	0.020^{***}	0.018^{***}	0.024^{***}	0.019^{***}	0.016^{***}
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Urban (1-4)		-0.003	-0.005^{*}		-0.005^{*}	-0.007^{**}
		(0.002)	(0.002)		(0.002)	(0.002)
Pol. Inform. (0-3)		0.054^{***}	0.057^{***}		0.060^{***}	0.063^{***}
		(0.002)	(0.003)		(0.002)	(0.003)
Unemployed (0/1)			-0.083^{***}			-0.092^{***}
			(0.008)			(0.009)
R^2	0.130	0.146	0.165	0.102	0.121	0.141
Adj. R^2	0.129	0.145	0.163	0.101	0.120	0.140
Num. obs.	30970	30786	21594	27937	27753	19752

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. All models with country-year-fixed effects.

The substantive effects of economic grievances on participation compared to other variables is difficult to assess from the plain coefficients alone, as the different covariates are based on very different scales. Table 2.3 thus presents standardized beta coefficients for some of the coefficients from the full models above, which are based on the active labor force only. A one standard deviation increase in relative status decreases political participation by 0.047 standard deviation. This effect size is comparable to the one by education or income, two of the arguably most important determinants of political participation. The same can be said cautiously[6] of actual unemployment status. Despite the arguably more immediate consequence of becoming unemployed as opposed to experience an increase in unemployment risk, the effects are of very similar magnitude. In contrast, the same relative movement of political information in the population has a clearly larger effect than economic grievances. As seen in previous models, deprivation, much in contrast to the first measure of economic grievances, mobilizes individuals. The positive effect of temporal changes in hardship is comparable in size to the demobilizing force of structural disadvantage.

Table 2.3: Standardized Coefficients

	Relative Status	Deprivation
Economic Grievances	-0.047	0.052
Education	0.039	0.031
Income	0.066	0.058
Urban	-0.016	-0.020
Pol. Inform.	0.161	0.179
Unemployment Status	-0.057	-0.061

Economic grievances could thus be considered of medium importance. More influential than type of residence; comparable to the effects of income and education; but less powerful in predicting political participation than individual political knowledge. A numerical example will help pin down the substantive effect. The standard deviation of relative status is 0.028 and the standard deviation of the dependent variable is 0.373. Accordingly, a standard

[6]Standardization of binary predictors such as unemployment status is not recommended as it is unclear how to interpret an increase by one standard deviation.

deviation increase in the explanatory variable, that is an increase in unemployment within my occupational group from 5 to 7.8 percent when the national unemployment rate is at 5 percent, is associated with a decrease in political participation by 2 percentage points (0.047 x 0.373=0.018), which is in line with the non-standardized coefficients in Table 2.2 (approx. 0.6 percentage points decrease for a one unit increase in relative status).

2.5.5 Robustness

This section offers a set of robustness checks on the empirical specification of the models presented so far. The empirical strategy may be extended in various ways. To begin with, additional covariates on individual socio-economic status and religiosity are included. These variables are not available for all countries in the sample and thus result in a severe reduction of observations and a non-random modification of the underlying sample, which is why I did not include them in the main models. Secondly, two different models demonstrate that the results presented above do not hinge on the set-up of the regressions as linear probability models with fixed effects.[7] On the one hand, logistic regression is usually applied when the dependent variable is binary, as in the present case. In contrast to linear models, the logit transformation of the dependent variable makes out-of-bound predictions impossible, which comes at the cost of less intuitively interpretable coefficients. The second column of the following robustness tables shows that sign and significance of the coefficients is unaffected by this alternative specification. On the other hand, multilevel models are used when the analysis deals with a nested data structure, which also applies here. As briefly discussed above, such hierarchical models are usually not recommended for data sets with a small number of level-2 units (Stegmueller, 2013; Möhring, 2012; Bryan & Jenkins, 2016), but Elff and colleagues (2016) recently challenged this allegedly conventional wisdom. The third

[7] Calculating clustered standard errors to account for within-cluster correlation and heteroscedasticity might be another reasonable specification. However, clustered standard errors are known to have bad small sample properties and are not recommended for small numbers of clusters. Angrist and Pischke (2009) suggest 40-50 as a rule of thumb. Indeed, clustering standard errors in the present case with 18 countries results in rather unreliable behavior, e.g. *de*creasing standard errors in the models concerned with relative status. As a consequence, I refrain from presenting those results.

column in Table 2.4 and 2.5 thus demonstrates the robustness of the presented results to their suggested model specification based on a Restricted Maximum Likelihood (REML) estimator and corrected degrees of freedom via the Satterthwaite approximation.

Finally, as the second measure of economic grievances, relative deprivation, is a variable capturing within-group change in hardship over time, one might ask whether the dependent variable should be conceptualized accordingly. The CSES allows for such a specification, as respondents are not only asked about participation in the most recent election but also about participation in the previous election. Consequently, Table 2.5 includes a fourth column with a linear probability model regressing change (in political participation) on change (in economic grievances).

To sum up, it can be said that the central result of fundamentally opposing behavioral consequences of structural as opposed to dynamic economic grievances is very stable. The additional models reproduced the findings from the analysis presented in Table 2.2, which was based on a deliberately simple model specification. All in all, the negative correlation between relative status and political participation appears somewhat stronger and statistically more precisely estimated than the mobilizing effect of deprivation. Yet, both coefficients prove robust across specifications and hence lend credence to the insights of the main analysis.

2.5.6 Extension

An interesting aspect of deteriorating economic conditions over time is their at least partial independence from socio-economic status: Deprivation can occur on any level of hardship. Indeed, the (negative) correlation between deprivation and, for example, income is close to zero (r=-0.06 across countries). As a last step, I thus examine whether the mobilizing effect of deprivation applies equally to the entire sample or whether specific subgroups react in a particularly sensitive manner to a relative increase in economic grievances.

Table 2.4: Robustness Relative Status

	Extended	Logit	ML
Relative Status	-0.634^{***}	-4.882^{***}	-0.753^{***}
	(0.120)	(0.486)	(0.071)
Age	0.009^{***}	0.063^{***}	0.009^{***}
	(0.002)	(0.005)	(0.001)
Age sq.	-0.000^{***}	-0.000^{***}	-0.000^{***}
	(0.000)	(0.000)	(0.000)
Female (0/1)	0.003	0.041	0.009^{*}
	(0.006)	(0.029)	(0.004)
Education (1-9)	0.009^{***}	0.096^{***}	0.007^{***}
	(0.002)	(0.012)	(0.001)
Income (1-5)	0.015^{***}	0.188^{***}	0.020^{***}
	(0.002)	(0.011)	(0.002)
SES: Worker (Ref. White Collar)	-0.015		
	(0.009)		
SES: Farmer	-0.077		
	(0.051)		
SES: Self-Employed	-0.039^{***}		
	(0.011)		
Urban (1-4)	-0.004	-0.040^{**}	-0.003
	(0.003)	(0.014)	(0.002)
Religiosity (1-4)	0.013^{***}		
	(0.003)		
Pol. Inform. (0-3)	0.053^{***}	0.467^{***}	0.054^{***}
	(0.003)	(0.016)	(0.002)
Unemployed (0/1)	-0.038^{**}		
	(0.012)		
Num. obs.	12805	30786	30786
Num. groups: cntry			18
Num. groups: year			11

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. All models with country-year-fixed effects.

Table 2.5: Robustness Deprivation

	Extended	Logit	ML	DV=change
Deprivation	1.322**	8.061***	0.676**	1.164**
	(0.512)	(2.004)	(0.245)	(0.358)
Relative Status	−1.083***	−7.589***	−1.037***	−0.426***
	(0.144)	(0.602)	(0.081)	(0.093)
Age	0.009***	0.060***	0.009***	0.002
	(0.002)	(0.005)	(0.001)	(0.001)
Age sq.	−0.000**	−0.000***	−0.000***	−0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Female (0/1)	0.008	0.078*	0.013**	−0.009
	(0.007)	(0.032)	(0.004)	(0.005)
Education (1-9)	0.007**	0.079***	0.005***	−0.003
	(0.002)	(0.013)	(0.001)	(0.002)
Income (1-5)	0.012***	0.173***	0.019***	0.005*
	(0.003)	(0.013)	(0.002)	(0.002)
SES: Worker (Ref. White Collar)	−0.009			
	(0.009)			
SES: Farmer	−0.161			
	(0.157)			
SES: Self-Employed	−0.026*			
	(0.012)			
Urban (1-4)	−0.005	−0.049**	−0.005*	0.003
	(0.003)	(0.015)	(0.002)	(0.002)
Religiosity (1-4)	0.015***			
	(0.003)			
Pol. Inform. (0-3)	0.059***	0.508***	0.060***	0.006*
	(0.004)	(0.019)	(0.002)	(0.003)
Unemployed (0/1)	−0.025			
	(0.014)			
Num. obs.	10977	27753	27753	25162
Num. groups: cntry			18	
Num. groups: year			11	

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. All models with country-year-fixed effects.

Heterogeneous effects are likely for two reasons, one related to the explanatory variable and one to the specificities of the dependent variable. First, deprivation might cause stronger activating emotions of frustration when an increase in grievances is a new and perhaps unknown and hence particularly intimidating experience. Individuals already used to high levels of precariousness might find another increase in hardship less unsettling as they, in contrast to higher socio-economic strata, have little to lose. Second, the dependent variable, turnout, differs from many other indicators of political behavior in that it follows well-known habitual patterns. Voting is seen as a habit that citizens learn during their formative years (Franklin, 2004). This learning experience is dominated by socio-economic status (Verba & Nie, 1972; Franklin, Lyons & Marsh, 2004). As a consequence, voters from among higher social strata might be less responsive to an increase in economic grievances, or any modification of circumstances, for that matter, but instead keep participating in elections as they have always done. Taken together, we would expect the middle class to react particularly strongly to economic deprivation if the psychological underpinnings of the formulated hypotheses are correctly anticipated.

To test this proposition, I examine heterogeneous effects of deprivation by the means of interactions. I use income as a straightforward but admittedly simplistic indicator of socio-economic status.[8] Figure 2.6 displays average marginal effects of deprivation conditional on different income levels (full model in Table A3 in the appendix). The effect of deprivation indeed varies across different income groups: In line with the formulated expectation, the mobilizing effect of a relative increase in economic adversity is most pronounced or, more precisely, virtually confined to individuals in the middle of the earnings distribution. An increase in unemployment risk is associated with higher turnout among the (lower) middle class in income quintiles 2 and 3. Much in contrast, among individuals in the poorest as well as in the two richest income quintiles, deprivation does not have a statistically significant positive effect.

[8] An obvious alternative is the interaction between the two indicators of grievances. Interestingly, while the two indicators are to some extent positively correlated (overall only r=0.05; but strength of positive correlation varies strongly between countries), one does not moderate the impact of the other with respect to turnout. The positive effect of deprivation is virtually unrelated to the level of relative status.

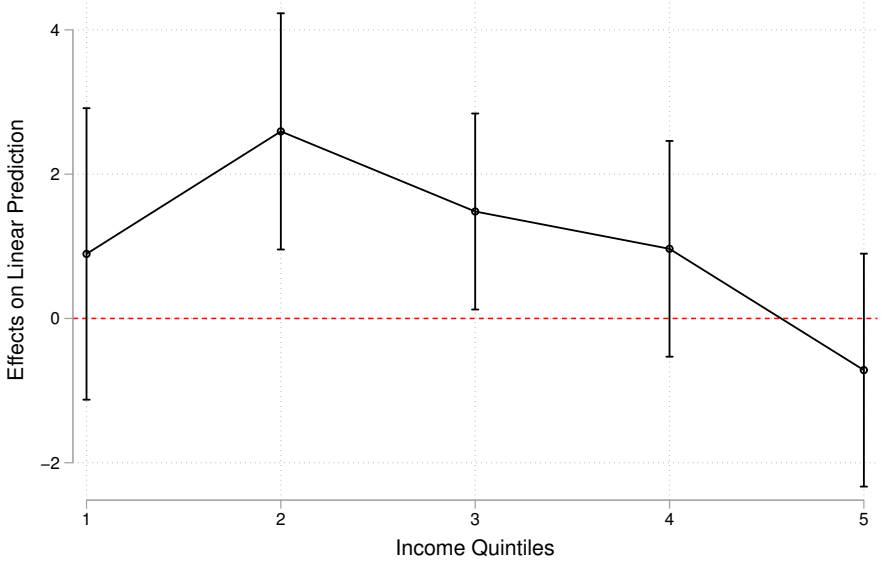

FIGURE 2.6: Effects of Deprivation conditional on Socio-Economic Background

2.6 Conclusion

Many advanced capitalist democracies have undergone severe economic turmoil during the last decade. While the economic crisis has certainly triggered a resurgence of studies on political reactions to economic hardship, political scientists are still struggling to draw a conclusive picture of the Great Recession's political repercussions. Even with regard to one of the most fundamental questions, i.e. whether adverse economic circumstances mobilize or demobilize citizens, the existing literature is not in full agreement. This article has suggested that some of this controversy is due to insufficiently precise measures of the explanatory variable and presented a theoretically grounded conceptualization that addresses - and to some extent reconciles - existing inconsistencies. Based on the argument that much of the existing work is deaf to *relative* changes in economic conditions, I have developed a measure of economic grievances that draws on the extensive literature on social and historical reference points. The crucial insight from the examination of this literature is that relative material deterioration can occur virtually independently of of the absolute economic trajectory. By implication, studies based on commonly available absolute indicators of economic

well-being run the risk of missing important parts of the mechanism connecting economic hardship and political participation.

An empirical application of this more fine-grained measure supports the conjecture of hitherto incomplete conclusions. I argued that economic disadvantage relative to other parts of the society (relative status) will have very different behavioral implications than economic disadvantage relative to someone's previous experience (deprivation). While the first is related to more long-term structural disadvantage, the latter is concerned with the deterioration of economic conditions net of the absolute level of well-being. I tested this proposition based on micro-level data in a cross-sectional setting of a total of 31 elections in 18 countries, finding evidence for the claim that relative status strongly demobilizes citizens, whereas deprivation has exactly the opposite effect. This is an important qualification of existing results: Both of the influential yet conflicting strands of literature dominating the debate, grievance theory on the one hand and the resource school on the other, are to some extent correct. However, each one applies with respect to structurally distinct patterns of economic hardship. As a consequence, it seems vital to conceptually and empirically disentangle these distinct experiences.

Fifty years ago, Runciman (1966, p. 24-25) with reference to Durkheim wrote that citizens keep still not because they own more or less but because they are convinced that "they have no right to more". As a consequence, it was "not difficult to see how the aspirations of the underprivileged could be kept low enough for the pattern to remain undisturbed" in societies with stable histories of inequality. However, it seems unlikely that inequality and perceived injustice continues to be passively accepted once the "possibility of improvement has been disclosed". These early observations square nicely with the present analysis. Longstanding structural differences in economic hardship convey the impression of unalterable fundamental conditions and hence produce passivity rather than rebellion. In stark contrast, citizens whose material circumstances deteriorate over time are undeniably aware of the possibility of improvement given their previous experience. Discontent with current conditions and

activation are the expected reaction, which is confirmed by the positive association found between relative deprivation and political participation.

Put together, these findings highlight the importance of relativeness in the (self-) assessment of economic conditions, which in turn calls for careful conceptualization of the explanatory variable. The results add to a nascent political science literature focusing on social comparisons and reference points in order to get at a better understanding of the relationship between the economy and politics both on the macro- and micro-level (Incantalupo, 2011; Kayser & Peress, 2012; Aytaç, 2017; **?**).

Explicitly modelling processes of social comparison helped shed new light on an old question. Yet, there is need to further explore context conditions moderating the relationship between different forms of economic grievances and political participation. The present analysis focused on the universal effect between these variables and thus neglected important contextual factors that moderate the link between individual characteristics and political participation (see, e.g. Gallego, 2010). Cross-national variation clearly deserves more attention. It stands to reason that mobilization as well as demobilization partly depend on the political alternatives voters can choose from on election day. Beyond the party supply side, future research might look into how different economic context conditions, different electoral systems or differences in electoral rules and institutional arrangements moderate the direct effect of different forms of economic grievances.

2.7 Appendix

TABLE A1: Descriptive Statistics

variable	scale	mean	sd	med	min	max
vote	binary	0.833	0.373	1	0	1
relative status	cont.	0.000	0.028	-0	-0	0
relative deprivation	cont.	0.000	0.009	-0	-0	0
age	cont.	48.622	15.941	48	17	98
female	binary	0.507	0.500	1	0	1
education	1-9, 9 = doctorate	5.269	1.786	5	1	9
income	1-5, 5 = highest quintile	3.116	1.371	3	1	5
SES	categ.				1	4
urban	1-4, 4=large town/city	2.585	1.117	3	1	4
religiosity	1-4, 4=very religious	2.332	1.037	3	1	4
pol. inform.	0-3, sum of 3 binary items	1.666	1.017	2	0	3
unemployed	binary	0.068	0.253	0	0	1

Table A2: Country-Year Sample (CSES)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AT	0	0	0	0	0	0	0	0	424	0	0
BG	0	0	0	0	0	0	0	0	0	856	0
CH	0	0	0	0	0	0	3384	0	0	0	0
CZ	0	0	0	0	0	0	0	0	1185	0	0
DE	1831	0	0	0	1688	0	0	0	1524	0	0
DK	0	0	753	0	0	0	0	0	0	0	0
EE	0	0	0	0	0	0	453	0	0	0	0
ES	0	0	0	869	0	0	0	0	0	0	0
FI	0	0	1098	0	0	0	966	0	0	0	0
FR	0	0	1678	0	0	0	0	1699	0	0	0
IE	0	0	1049	0	0	0	0	0	0	0	0
IS	0	0	1063	0	729	0	0	0	0	0	0
NL	0	1382	0	0	0	1270	0	0	0	0	0
NO	1284	0	0	0	1464	0	0	0	1387	0	0
PL	1805	0	1396	0	0	0	1518	0	0	0	0
PT	0	0	0	0	1151	0	0	0	0	0	527
SE	0	1058	0	0	0	0	0	0	0	730	0
SI	0	0	0	0	0	0	590	0	0	0	0

TABLE A3: Conditional Effects of Deprivation (Full Model)

	Model 1
Relative Deprivation	0.894
	(0.611)
Income q2 (Ref. q1)	0.013
	(0.009)
Income q3	0.030***
	(0.009)
Income q4	0.047***
	(0.009)
Income q5	0.055***
	(0.009)
Deprivation X Income q2	1.698*
	(0.729)
Deprivation X Income q3	0.588
	(0.686)
Deprivation X Income q4	0.071
	(0.677)
Deprivation X Income q5	−1.610*
	(0.744)
Relative Status	−1.083***
	(0.102)
Age	0.010***
	(0.001)
Age sq.	−0.000***
	(0.000)
Female (0/1)	0.017***
	(0.005)
Education (1-9)	0.006***
	(0.002)
Urban (1-4)	−0.007**
	(0.002)
Pol. Inform. (0-3)	0.064***
	(0.003)
Unemployed (0/1)	−0.093***
	(0.009)
Num. obs.	19752

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$. Models with country-year-fixed effects.

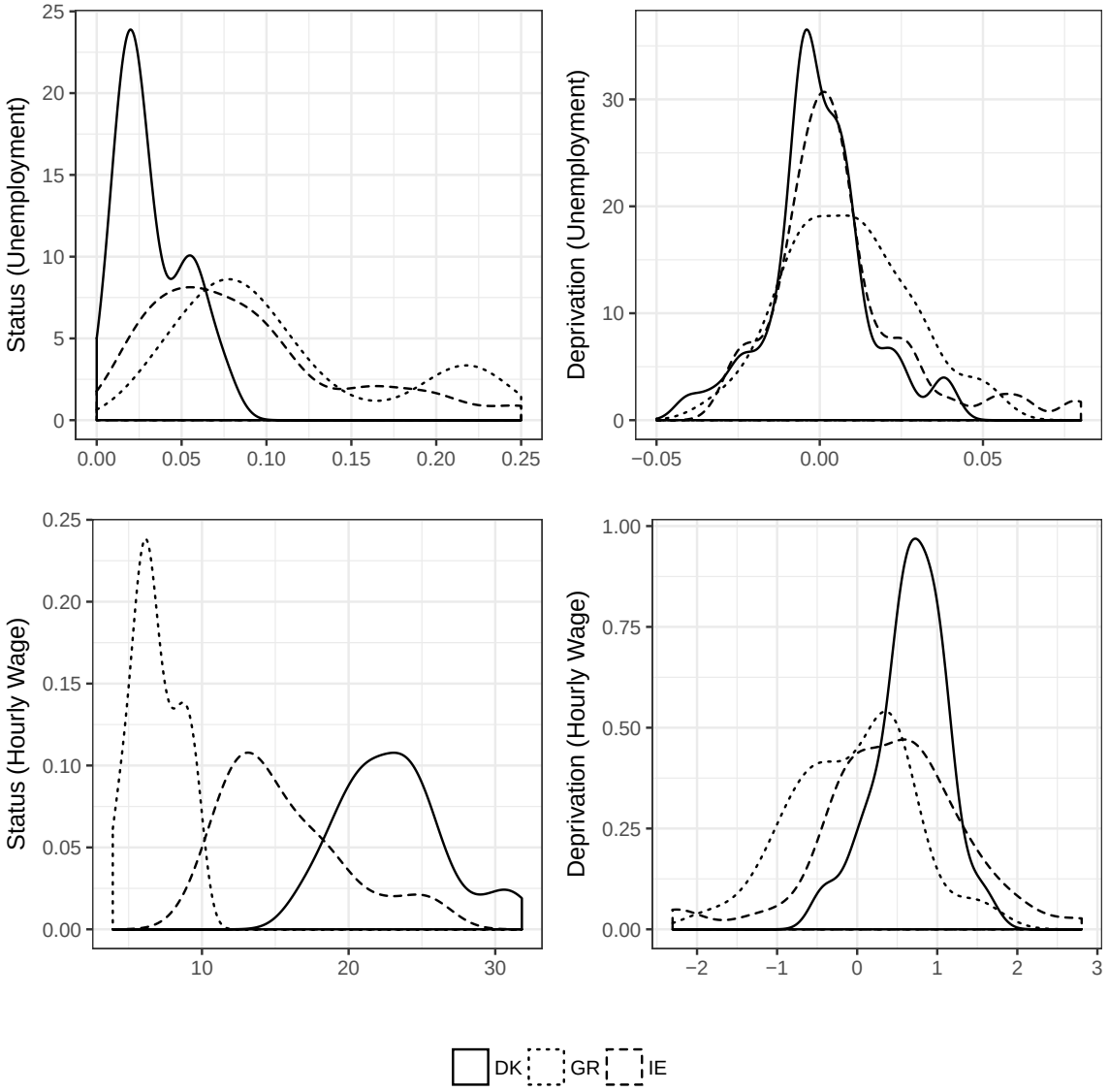

FIGURE A1: Country-Specific Distributions of Economic Grievances

3 Economic Grievances and Political Protest

with Silja Häusermann, Bruno Wüest and Matthias Enggist

How do economic grievances affect citizens' inclination to protest? The existing research on the link between economic grievances and political participation remains empirically inconclusive. Based on ESS and EU-SILC data from 2006 until 2012, as well as newly collected data on political protest in 28 European countries, we advance a new argument that explains the existing inconclusive findings to some extent. We contend that the link between economic disadvantage and protest is mediated by political context: Citizens need signals and opportunities in order to be both able and willing to voice their grievances. Our findings show that political mobilization indeed decisively conditions the relationship between economic grievances and protest behavior. In vibrant political environments, which offer manifold opportunities to voice dissatisfaction, citizens experiencing direct economic grievances turn out to be equally or more likely to take part in non-electoral politics than those unaffected by economic turmoil. Furthermore, our analyses underline the importance of conceptualizing economic grievances precisely: structural economic disadvantage depresses participation in protest, but a deterioration of economic prospects increases it. The context of protest mobilization has a consistent interaction effect with both the level and change in economic grievances: it moderates the depressing effect of low status and reinforces the activating effect of deterioration. There is a strong political message in our argument: if political mobilization by collective actors indeed conditions the link between economic grievances and protest, then democracy itself can help sustain political equality and prevent the vicious circle of democratic erosion in a context of growing economic inequality.

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3.1 Introduction

The study of economic hardship and its unequal distribution in the societies of the OECD world has increased massively over the past decade in economics, sociology and political science. The main driver of this renewed scholarly interest in the determinants and consequences of inequality is substantive: after half a century of increasing equality, the "great U-turn" (Harrison & Bluestone, 1988) has reversed the secular trend of declining inequality in most highly developed countries from the 1970s onwards (Alderson & Nielsen, 2002). Today, economic inequality i.e. the unequal distribution of economic resources is on the rise with regard to income (OECD, 2008, 2011; Smeeding, 2005), wealth (Piketty, 2014) and economic risks more generally (Emmenegger et al., 2012; Rehm et al., 2012). The most recent economic turmoil — the Great Recession that has shaken the OECD from 2008 onwards — has further accelerated these trends and amplified inequalities even more.

Political scientists are right to take a keen interest in this development, since the possible implications of inequality for the functioning of politics and the quality of democracy are manifold and serious. Despite the apparent importance of this relationship, however, we still know surprisingly little on how exactly individual hardship — economic grievances — and its unequal distribution in societies — economic inequality — affect citizens' political behavior in democracies. The relevant studies remain rather disparate and the findings inconclusive in both theoretical and empirical terms. On the one hand, blatant economic inequality may repel and demobilize citizens, especially the weakest among them (Solt, 2008), jeopardize political responsiveness and thereby undermine the very foundations of democracy (Dahl, 1998). In this respect, eminent scholars such as Offe (2013), Mair (2006, 2009) as well as Streeck & Schäfer (2013) have powerfully argued that when citizens experience economic strain and see politicians as unresponsive to their grievances, they may be alienated not only from the current government but from democracy itself. What is more, political alienation of the disadvantaged might spur a vicious cycle of democratic erosion (Bartels, 2008), with unequal turnout being mirrored in unequal responsiveness (Griffin & Newman, 2005), which,

in turn, produces policies that are detrimental to the disadvantaged and thereby amplify economic inequality. In the end, this self-reinforcing process further depresses participation among the less well-off. On the other hand, democracy is the one political system that inherently provides citizens with the political and civil rights to mobilize against rising inequality, and to protest their grievances. Democracy provides people with means to voice their disagreements, organize collectively and overturn elites democratically, which is why economic inequality may also stimulate democratic engagement (e.g. Gurr, 1970; Brady, 2004; Oliver, 2001). The widespread protest activity across Europe during the most recent economic crisis has been interpreted in that sense, and it triggered a new wave of research in the tradition of grievance theory (Bernburg, 2015; Grasso & Giugni, 2016; Kern et al., 2015; Rüdig & Karyotis, 2014).

Hence, the literature diverges both in the theoretical expectations and empirical findings. In this paper, we aim at explaining, and to some extent reconciling, some of the contradictory findings by bridging two strands of research that have all too often been treated in isolation: the social movement and the political economy literature. Political economy pays attention to actors' material interest and thus helps counter the "strange disappearance of capitalism in social movement studies" (Hetland & Goodwin, 2013), which is especially peculiar in the light of widespread anti-austerity protests around the globe (Della Porta, 2015; Stanley & Goodwin, 2013). The burgeoning literature that studies protest activity from a political economy angle, in turn, has disregarded a decade-long insight at the heart of the social movement literature, namely that context and "opportunity structures" critically moderate the relationship between material conditions and individual inclination to protest. By combining the strengths of both literatures, we are able to explain some of the contradictions in previous research and thereby contribute to a better understanding of the link between economic grievances and protest activity.

As the political reactions of those experiencing the disadvantages of increasing material disparities are at the heart of the debate about the normative implications of inequality, our focus is on the impact of individual economic grievances on political activity. We argue

that a good part of the inconclusiveness in existing work is based on a puzzling neglect of crucial context variables that mediate the link between economic hardship and participation. Recently, Grasso & Giugni (2016) have rightly pointed to this disregard and introduced the institutional context and the economic environment as mediating factors in the analysis. Beyond institutions, however, we argue that a more actor-centered conceptualization of context is equally relevant: the role of political mobilization, i.e. the presence of visible, organized protest. The neglect of political mobilization in the political economy literature is surprising in the light of the eminently important role this factor has played in social movement theories for a long time. Very early on, social movement scholars in the tradition of grievance-theory suggested that "[...]the existence of strain and relative deprivation is a necessary but not a sufficient condition for social protest" (Kitschelt, 1986, p. 59). In other words: there is no direct, structural link between the experience of individual economic hardship and protest. Rather, citizens need signals in order to be both able and willing to voice their grievances (Granovetter, 1978; Tarrow, 1994). This idea is also nicely reflected in Verba, Schlozman and Brady's (1995, p. 269) three famous factors to explain why citizens refrain from political engagement: because they can't, because they don't want or because nobody asked. The third reason clearly hints at an interaction between socioeconomic status and the mobilizing context effects. Neglecting this interaction between the political context and economic grievances may leave us not only with an incompletely specified model of political behavior, it may also suggest an all too fatalistic picture of democracy in times of increasing inequality.

We report two important findings on the relationship between individual hardship and political reaction, both of which help reconcile conflicting findings in the existing literature. First, with regard to the direct effect of economic grievances on protest behavior, we find that the conceptualization of grievances matters crucially. While structural economic disadvantage (i.e. the level of grievances) unambiguously de-mobilizes individuals, the deterioration of economic prospects (i.e. a negative change in economic grievances) instead increases political activity. Second, we provide robust empirical evidence for our central hypothesis that

the level of political mobilization indeed substantially moderates this link between individual hardship and political activity. In a strongly mobilized environment, even structural economic disadvantage is no longer an impediment to political participation. We contend that there is a strong political message in this interacting factor: if the presence of organized and visible political action is a decisive signal for citizens and conditions the micro-level link between economic grievances and protest, then democracy itself — i.e. organized collective action — can help sustain political equality and prevent the vicious circle of democratic erosion.

3.2 Economic Grievances and Participation

Research about the relationship between economic adversity and political engagement exists with a focus on both the micro- as well as on the macro-level. The first is concerned with individual socio-economic status related to (shocks in) resources such as income or unemployment (e.g. Verba & Nie, 1972; Rosenstone, 1982), whereas the latter deals with the aggregation and often unequal distribution of those resources (e.g. Blais & Dobrzynska, 1998; Solt, 2008). Although we focus on the micro-level in the empirical analysis, the literature concerned with the distribution of grievances helps us to connect thee individual-level findings to their fundamental political implications for society as a whole. Economic inequality is always rooted in the differential distribution of economic hardship, so the two debates are inevitably coupled.

Interestingly, both the micro- and the macro-level research strands are characterized by the same division into two competing perspectives that imply fundamentally different theoretical expectations. On the one hand, the "mobilization hypothesis" (Schlozman & Verba, 1979) or "grievance theory" (Kern et al., 2015) expects disadvantaged voters to blame the government for their situation and actively express their dissatisfaction both through the ballot box and out on the streets. Along similar lines, Solt (2008) tackles the issue from a distributional perspective and hypothesizes that economic inequality may produce clear-cut differences

in preferences between the rich and the poor, which fuels the debate about appropriate policy decisions and raises the stakes of elections. The logic behind this "conflict theory" has implications for our micro-level relationship between economic hardship and political activity: growing economic grievances incentivize participation and increase turnout among the disadvantaged. The findings of several studies support these hypotheses on the basis of cross-national or cross-regional evidence (Brady, 2004; Oliver, 2001).

The "withdrawal hypothesis" (Rosenstone, 1982), on the other hand, makes exactly the opposite claim: economic grievances demobilize participation. Individuals confronted with (increasing) economic strain may be strongly preoccupied with making ends meet and hence lack the capacity to engage in politics (Rosenstone, 1982). Again, Solt (2008) tests a similar hypothesis based on the aggregate distribution of grievances in society: According to relative power theory, the economically disadvantaged will refrain from political participation due to the lessons learnt from the existing imbalance in political influence and power. Economic inequality equips the affluent with disproportionate capabilities to influence politics, while the voices of poorer individuals are consistently ignored. Repeated political decisions to the detriment of the less well-off eventually make disadvantaged individuals realize that their attitudes are unlikely to prevail in the political process. Consequently, they may avoid wasting time with fruitless political participation and decide to abstain.

Inconclusive evidence with respect to the two competing hypotheses is, however, not the only weakness of the literature on inequality and political participation. Most of the existing research also adopts a rather narrow focus on conventional political participation, and is primarily concerned with the effect of economic grievances on the propensity to vote. However, such a focus on national elections and electoral behavior might actually be problematic when assessing the political consequences of economic hardship. First, electoral politics and the economy follow different temporal patterns. At the time of experiencing economic adversity, a reaction via elections might simply not be at citizens' disposal. Particularly in the context of the widespread harm caused by the recent financial crisis, a strong and sudden macro-economic shock, citizens are likely to look for immediate opportunities to

express their grievances rather than waiting for the next election to punish governments at the ballot box (Kriesi, 2014). Second, even if elections happen to be scheduled in the midst of economic turmoil, the opportunities to express economic grievances still remain strongly constrained by political supply-side factors: voters are reliant upon the existing parties, or the candidates running for election, and might not find a suitable channel to satisfactorily express their dissatisfaction. This is why in this article we focus on unconventional political participation, i.e. participation in demonstrations, supporting boycotts or signing petitions. These are means of political engagement that are available at any time for anyone, whenever deemed necessary and effective.

And yet, despite their long history, studies linking economic grievances to political protest behavior, also provide us with conflicting evidence — just like the literature concerned with turnout. The idea that social unrest evolves as a reaction to injustice and widespread deprivation figured prominently in traditional Marxian theories on protest and revolution. In the 1940s and 1950s, the theory has been refined insofar as the focus shifted from deprivation in absolute terms to relative deprivation, i.e. unmet expectations (see, e.g., Geschwender, 1964; Gurr, 1970; Runciman, 1966). However, the relative deprivation approach largely failed to prove its explanatory power in empirical work as there did not seem to be a direct link between (relative) deprivation and protest behavior — and increasingly fell out of fashion (Gurney & Tierney, 1982). During the recent economic crisis, however, this link has again gained momentum: the simultaneous occurrence of a widespread increase in economic hardship and the impressive surge in unconventional political mobilization renewed the scholarly interest in grievance theory and triggered new empirical evaluation on economic determinants of political protest (Bernburg, 2015; Della Porta, 2015; Giugni & Grasso, 2015; Grasso & Giugni, 2016; Kern et al., 2015; Rüdig & Karyotis, 2014; Solt, 2015). Nevertheless, this more recent empirical work has still not helped reduce the ambiguity: Single-country studies as well as comparative evaluations come to conflicting conclusions regarding the impact of grievances on protest activity (see, e.g., Bernburg, 2015 on Iceland; Rdig and Karyotis, 2014 on Greece; or a comparative study by Solt, 2015).

In the light of this host of diverging expectations and findings, how can we make sense of the link between the unequal distribution of economic risk and participation? Our argument starts from the observation that the existing research in political economy and political behavior has almost entirely neglected a key message of the social movement literature: mobilization and opportunity matters. What this literature has emphasized already three decades ago is that behavior is not a direct consequence of hardship. In other words: grievances are not a sufficient condition for protest (Kitschelt, 1986). Rather, people must be mobilized and collective actors have to politicize grievances. There need to be "opportunities" available for both electoral and unconventional protest (Grasso & Giugni, 2016).

3.3 The Argument: Mobilization as a Conditioning Factor

We argue that the relationship between individual-level experiences of economic hardship and participation in protest activities depends on the presence or absence of a crucial context condition: political mobilization. By political mobilization, we mean publicly visible collective action, usually organized by protest entrepreneurs such as trade unions, political parties or civil society groups. In other words, our key hypothesis in this paper is that political mobilization conditions the link between economic grievances and protest.

The literature on individual economic determinants of protest behavior and the literature on the context conditions of non-conventional political action have lived rather separate lives for a long time. Social movement studies have traditionally conceptualized individual protest reactions as a function of the political environment, i.e. the political opportunity structure (Arzheimer, 2009; Della Porta, 2008; Eisinger, 1973; Kitschelt, 1986; Kriesi, 1989; Kriesi, Koopmans, Duyvendak & Giugni, 1992). Mostly, this political opportunity structure is defined as an exogenous source of mobilization including the behavior of allies, adversaries, and the public, the permeability of the political system as well as societal, economic and cultural context conditions (Koopmans, 1999). As for the literature on individual economic determinants of protests, Grasso & Giugni (2016) only very recently have suggested that micro-

and macro-level factors might in fact be interrelated. They provide evidence that "political opportunities", i.e. the macroeconomic context (the unemployment rate) and certain policies (social policy spending), strengthen the link between economic grievances and protest participation. Although our argument builds on the reasoning by Grasso & Giugni (2016), we take an immediate, more actor-centered, view on political context conditions. Economic strain does not in and of itself trigger or mediate protest (p. 59 Kitschelt, 1986). Rather, people's grievances must be politicized. Collective actors, i.e. political entrepreneurs, play a crucial role in this process, since they use and provide political opportunities in terms of mobilization. Insofar, public attention to protest is itself a major source of further political mobilization, an argument that figures prominently in many classic social movement studies (Della Porta, 2014; Granovetter, 1978; Tarrow, 1994).

The moderating role of political mobilization on individual protest behavior relies on two mechanisms. The first mechanism, theorized in the social movement literature (Kriesi, Koopmans, Duyvendak & Giugni, 1995), is concerned with the organizational capacity of social movement entrepreneurs to facilitate the emergence of collective protest. The financial and organizational power and strength of these entrepreneurs varies strongly between different national contexts and helps explain the occurrence of protest activity. Related to this more formal channel, however, we identify a second, equally important mechanism at the individual level: increased visibility of ongoing protest sends signals to individuals and encourages them to participate in protest activities and publicly voice their dissatisfaction. For our research question, this second micro-level mechanism is crucial, as it links individual-level grievances and individual-level protest behavior.

The underlying rationale behind the second mechanism is based on the fact that an increase in publicly visible collective protest will encourage and incentivize protest behavior among citizens who experience economic grievances, but who have not yet been engaged in protest activities themselves. At the level of an individual, mobilization occurs through two different channels: a demonstration effect and an attribution effect. The demonstration effect refers to "threshold models" of political protest (Granovetter, 1978; Kuran, 1991),

meaning that citizens' beliefs in the value of participating in protests may change when the intensity of existing protest passes a certain threshold. This threshold for mobilization is particularly important in contexts where protesting is very costly (e.g. in terms of (violent) repression), but it is likely to matter even without repression, as existing protest conveys informational cues to citizens about the legitimacy and value of voicing their discontent. Citizens see that many other fellow citizens believe in the fact that their protests are valuable and potentially effective. In addition, ongoing political protest events obviously reduce the costs citizens incur from protesting, since they can join existing events rather than having to organize collectively from the start. Protest can then spread through bandwagon effects (e.g. Tarrow, 1994) and informational cascades (Lohman, 1994), meaning that media coverage of the protests multiplies the signals received by the population. The more information media convey about protests, the more potential adopters are exposed to information whether collective actions are considered legitimate, reasonable, and realistic by society at large (Braun & Koopmans, 2009; McCammon, Muse, Newman & Terrell, 2007). The second channel through which citizens may be mobilized to protest has less to do with informational cues emanating from existing protest but with the attribution of grievances. Particularly in the area of economic grievances, i.e. the experience of deprivation such as unemployment or income loss, the reaction of an individual to this experience depends on whether a person attributes the grievance to her own fault or whether she blames outside factors for this grievance. For example, the effect of individual unemployment on participation in elections crucially depends on the current unemployment rate: In a context of rising unemployment rates, joblessness is increasingly conceived as a societal problem for which the government should provide a remedy and consequently rather mobilizes than de-mobilizes unemployed voters (Incantalupo, 2012, Grasso and Giugni, 2016, theorize a similar mechanism). In a similar vein, Arzheimer (2009) points to the importance of "shared sufferings" as a precondition for political protest against economic grievances. By seeing more and more other citizens who have experienced similar deprivation blaming the elites and asking

for protective political actions, we would expect citizens to be encouraged to participate in protests themselves, as they see their frustrations shared and legitimized.

3.4 Data, Measures and Method

We draw on three different data sources in order to compile a dataset that provides an accurate measure for each of the three core concepts (protest, grievances and mobilization) of this paper.

The first source of our analysis is the European Social Survey (ESS), a comparative survey that contains detailed questions about individual protest behavior. Respondents are asked whether during the year preceding the survey they took part in a demonstration, signed a petition, wore a protest badge or boycotted certain products. For the dependent variable, we created a dummy variable coded as 1 if a respondent answered one of these four questions affirmatively.

For the main independent variable, i.e. economic grievances, not only valid data but also a more substantial conceptual effort is required. Despite frequent theoretical and empirical applications, the concept of grievances remains an elusive one and the literature does not provide much guidance when it comes to operationalization. Especially in the social movement literature, grievances appear as an undertheorized concept, which results in a confusing diversity of approaches in terms of measurement. When reviewing the relevant literature, at least two conceptualizations of grievances as drivers of protest can be identified. A first strand is concerned with grievances as a relative concept, i.e. as the experience of disproportionate economic hardship compared to other parts of society. In the literature on conflict studies, this concept has been coined "horizontal inequality" and has proved its explanatory power regarding civil war and violent upheavals (Cederman, Weidmann & Gleditsch, 2011; Ostby, 2008). In the comparative political economy literature, similar conceptualizations of relative economic hardship have been applied to measuring insecurity and labor market disadvantage (Rehm, 2009, 2011; Schwander & Häusermann, 2013). A second

strand of literature also emphasizes the relative aspect of grievances, but focuses on the importance of a temporal dimension of comparison, i.e. the importance of a deterioration of the economic circumstances. In this view, the grievances of an individual refer to his or her economic hardship relative to what the individual experienced in the past. This is at the heart of traditional relative deprivation theory (Runciman, 1966) and has found application in recent examinations of protest behavior during the Great Recession (Rüdig & Karyotis, 2014). Both measures involve a relative component, either a static-societal or an individual-dynamic one. Since both are valid concepts of economic grievances, we operationalize both of them for our analyses.

What does economic grievance mean, especially in the context of the Great Recession? We suggest unemployment risk as a valid indicator of individual-level grievance in times of economic crisis. We focus on unemployment because losing a job is a clearly defined form of objective economic hardship that is known in every country of our sample and very close to the theoretical mechanisms proposed above. We focus on risk (rather than actual unemployment) because we are not primarily interested in a snapshot of a respondent's economic situation but in a more gradual manifestation of economic hardship. While employment status may fluctuate strongly across short time-spans, unemployment risk reflects gradual and structural economic threat and hardship more validly. This is why risk-based conceptualizations of economic hardship have become mainstream measures of economic hardship in comparative political economy, predicting political preferences and behavior (Rehm, 2009, 2011; Schwander & Häusermann, 2013; Geering, 2014; Rovny & Rovny, 2017; Rehm et al., 2012). In line with these contributions, we conceptualize risk as the prevalence of a specific form of economic vulnerability, unemployment in our case, within an occupational group. To bring in the two relevant dimensions of comparison developed above, we relate these group-specific unemployment rates to a) the average unemployment rate in the country (in order to capture the societal reference point) and b) to the group-specific unemployment rate in the previous year (in order to capture the temporal reference point). While the first approach to some extent approximates socio-economic status, i.e. a presumably quite stable

vertical stratification between socio-economic groups, the second approach dynamically captures changes in economic hardship within each strata of society. We call the first measure of grievances "relative status" in order to highlight the status-based nature the concept and the comparison with the societal average. The second measure we call "deprivation", which emphasizes the temporal aspect inherent to this concept.

- relative status = grievance$_{i,t}$ - grievance$_{j,t}$
- deprivation = grievance$_{i,t}$- grievance$_{i,t-1}$,

where i denotes the occupational group and j the entire country. Take for example a production worker in the midst of the Spanish unemployment crisis in 2012. According to EU-SILC, the unemployment rate within this occupational group at that time was 33.1%, the average unemployment rate in Spain was at 21.1%. This yields a relative status of 12.0. As unemployment among production workers was at 26.6% in the previous year, deprivation amounts to 6.4 in 2012. The values of the two grievance measures reflect Spanish production workers' double disadvantage in both societal and temporal terms. Much in contrast, unemployment among Spanish large employers and liberal professionals was at a comparatively low 9.3% in 2012. A relative status of -11.8 (9.3%-21.1%) reflects the comparatively comfortable position of this occupational group. However, even this privileged occupational group has not been spared by the surge of unemployment during the Great Recession and a deprivation value of 3.0 captures the group-specific increase in unemployment from 6.3% in 2011 to 9.3% in 2012. Even highly skilled and specialized occupational groups thus experienced a significant increase in economic grievances, which might trigger political action despite relatively low vulnerability compared to the rest of the country. We calculate economic grievances based on the European Union Statistics on Income and Living Conditions (EU-SILC). Table A1 in the appendix provides an extract of the underlying unemployment rates on which the resulting measures of economic grievances are based.

It has to be noted that such a conceptualization of grievances differs from the standard approaches in both social movement and political economy research. In the social movement

literature, grievances are usually understood as subjective perceptions of hardship such as fear of unemployment (see, e.g., Galais & Lorenzini, 2017), whereas contributions from political economy often rely on objective measures of material conditions, e.g. employment status. Our measure represents a middle ground, as we measure unemployment vulnerability within the respondent's occupational group. In so doing, we avoid both a too simplistic operationalization based on objective status as well as an entirely subjective indicator that entails risks of tautology when it comes to protest behavior. Insofar, we propose a measure that takes both strands of research seriously.

Finally, for our moderator variable, political mobilization, we need a measure that captures the visibility and activity of protest movements. Since we focus on the signaling effects of political mobilization, visibility is key. This is why we rely on data that records protest reports in the media. We think that aggregated and dynamic media data on protest activity is ideal to capture the signaling effects, which form the core of our theoretical argument. More traditional and static indicators of political mobilization (such as trade union density) might be appropriate to measure the financial and organizational capacity of movement entrepreneurs, but this is not what we are primarily interested in here (see the discussion of the key mechanisms in the theory section above). Instead, we rely on original protest event data from 28 European countries in the years 2000 to 2015 (see Wüest & Lorenzini (2017), for details on the data; the data was collected by two research teams at the University of Zurich and the European University Institute, Florence, in the years 2014-2015). In total, we have information about roughly 32'000 events that were reported in 10 international news agencies over the time of observation. Availability of EU-SILC data narrows the time span under examination to the years 2005 until 2014, which reduces the final number of protest events that are used in the analysis below to about 20'000 (see Table A2 in the appendix for details).

In order to merge this protest data with the micro-level data from ESS and EU-SILC, we add up the monthly number of protest events covered by the media within the one year preceding the ESS interviews (t-1 to t0) to match the wording of the ESS questionnaire, which ask

respondents whether they took part in any form of non-electoral political participation during the last 12 months. For our moderator variable, we are particularly interested in the change of number of protests, since the different levels of protest activity are relatively stable between countries. Therefore, we also summed up the number of protests in the period from t-2 to t-1 (24 to 13 months before the ESS survey) in order to calculate the change in the absolute number of protests in each country during the relevant period in which respondents' protest activity was asked for (t-1 to t0). This is a more valid indicator of a vibrant and mobilizing atmosphere of collective action and engagement than the mere level of activity, because people in countries with an active protest culture are quite likely to get used to a "baseline level" of non-electoral opposition.

It is important to note here that our moderator variable (extracted from newswire articles on protest events) and our dependent variable (self-reported individual participation in protest activity) capture two distinct concepts. Our indicator of collective mobilization is based on media reporting and captures the number of events covered, irrespective of their number of participants. It measures the intensity of media coverage on protests and therefore the extent to which opposition and resistance are visible at the aggregate level. Media reports on protest convey the public mood and have an important communication function insofar as they signal to (potential) protesters the degree to which others already have taken action. Our dependent variable, by contrast, measures individual behavior, i.e. a decision to voice discontent or remain silent. The moderator and the dependent variable are thus conceptually and empirically distinct, because the moderator variable is based on the number of reported protest events and not on the number of protesting individuals. Indeed, there is virtually no correlation between media reporting on protest and individual participation in protest (shown below Table 3.1) . Moderator and dependent variable coincide only if every respondent staged his or her own protest event, which is spectacular enough to be covered by the media.

We have combined several waves of the European Social Survey (ESS3-6, 2006-2012) in order to capture the entire time span from before the outbreak of the financial crisis onwards for 28

European countries. We add the data from EU-SILC by merging on Oesch's (2006) 8-class schema for each of the years in the data set (2006, 2008, 2010, 2012). Similarly, we add the data on protest mobilization from our own data collection. This results in a large dataset of more than 200'000 observations. Due to the nested structure of the data (individuals in countries in different years) and the binary dependent variable, we run hierarchical logistic mixed-effects models . We refrain from analyzing the data as a three-level structure as suggested by Schmidt-Catran & Fairbrother (2016) because of the specific construction of our measures of economic grievances. While the variable is technically situated at the lowest level, it entails information from the country dimension of the cross-classification at a specific time point. This is not a real problem when we only include the cross-classification in the data structure. When we also seek to estimate effects at the country-year level, however, then we create a collinearity problem, which results in unstable estimates.

In order to better isolate the (conditional) effect of economic grievances on individual protest activity, we control for potential confounders on both levels of analysis. On the micro-level, we control for well-known alternative individual determinants of protest participation: education, gender, age, political interest, union membership and being in a relationship (see, e.g., Solt, 2015). We do not control for political values and political efficacy, which are sometimes included in grievance studies of protest behavior, for the following reason: given our operationalization of the key independent variables (grievances) based on objective unemployment rates per occupational groups, political values and efficacy are downstream variables rather than confounders. On the macro-level, we add a variable measuring trade union density per country and year in order to separate the impact of financial and organizational capacity of protest movements from our signaling mechanism. Furthermore, we control for the party in government as well as for the official unemployment rate at the time of the survey, which capture the influence of the general political and economic context on protest behavior (Kriesi et al., 1995). Table A3 in the appendix provides descriptive information on all variables.

3.5 Analysis and Results

The first part of this article's empirical section is concerned with the direct relationship between economic grievances and political participation. As has been outlined above, the literature is characterized by fundamental disagreement even regarding the direction of this effect. Does economic hardship mobilize dissatisfied citizens to protest their adverse circumstances or does it rather lead to a focus on more existential threats reducing their "capacity to attend to politics" (Rosenstone, 1982)? Table 3.1 provides evidence against any univocal answer to this question: it highlights the importance of conceptualization and the differences resulting from distinct points of comparison (horizontal, temporal).

While model 1 only includes covariates on the micro-level, our first measure of economic grievances - relative status - is introduced in model 2. Our static variable of economic grievances, measured as group-specific unemployment rate compared to the average unemployment rate in the country, clearly shows a demobilizing effect. Being in a vulnerable occupation, i.e. an occupation particularly exposed to unemployment is negatively related to non-electoral political participation. Given the similarity between this measure and conventional indicators of socio-economic status, this might not come as a surprise. The "resource school" of political participation (e.g. Verba et al., 1995) has long argued that communication and organizational capacities essential to political engagement are closely related to socio-economic status. This view is corroborated by model 2, which shows that occupational classes with higher-than-average unemployment risk tend to participate less in non-electoral participation. Model 3, however, adds an interesting nuance to this finding. A change in the level of grievances over time, i.e. an increase in the group-specific exposure to unemployment, is related to an increase in the probability of political activity. In contrast to the temporally rather stable, status-based measure in model 2, the deterioration of a person's situation has a mobilizing effect. To understand this link, it is important to notice that the deterioration may happen at different levels of socio-economic status. The increase of unemployment risk, i.e. the economic deterioration, is a disconcerting, threatening ex-

TABLE 3.1: Economic Grievances and Protest: Direct Effects

	Model 1	Model 2	Model 3	Model 4	Model 5
Relative Status		−2.623***		−2.731***	
		(0.175)		(0.194)	
Deprivation			2.325***		2.189***
			(0.509)		(0.559)
Age	−0.014***	−0.014***	−0.013***	−0.014***	−0.013***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Female (1=yes)	0.218***	0.216***	0.232***	0.213***	0.231***
	(0.011)	(0.012)	(0.012)	(0.013)	(0.013)
Education	0.232***	0.203***	0.227***	0.204***	0.228***
	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Political Interest	0.563***	0.550***	0.559***	0.550***	0.559***
	(0.007)	(0.007)	(0.007)	(0.008)	(0.008)
Partner (1=yes)	0.023**	0.005	0.011	0.004	0.009
	(0.011)	(0.012)	(0.012)	(0.013)	(0.013)
Union Membership	0.321***	0.317***	0.310***	0.340***	0.333***
	(0.015)	(0.015)	(0.015)	(0.016)	(0.017)
Unemployment Rate				0.520	0.238
				(0.436)	(0.460)
Union Density				−0.002	−0.001
				(0.005)	(0.006)
GovParty: Dom Right				−0.104***	−0.096***
				(0.029)	(0.029)
GovParty: Balance				−0.130***	−0.125***
				(0.023)	(0.024)
GovParty: Dom Left				−0.162***	−0.165***
				(0.035)	(0.036)
GovParty: Heg Left				0.119***	0.119***
				(0.036)	(0.036)
AIC	202495.571	185631.321	181955.466	155772.217	152083.759
BIC	202587.069	185731.990	182055.893	155930.801	152241.889
Log Likelihood	-101238.785	-92805.660	-90967.733	-77870.109	-76025.879
Num. obs.	192226	174019	169862	148963	144806
Num. groups: cntry	28	28	28	27	27
Num. groups: year	5	5	5	4	4
Var: cntry (Intercept)	0.702	0.721	0.714	0.786	0.752
Var: year (Intercept)	0.010	0.011	0.011	0.003	0.003

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

perience at every level of relative status. The difference between the demobilizing effect of relative status and the mobilizing effect of over-time deprivation is an interesting finding, which highlights the importance of conceptualization and measurement, and quite likely helps explain some of the inconclusive evidence reviewed in the theory section. This finding is robust to the inclusion of additional covariates on the macro-level (model 4 and 5).

Let us now turn to the main empirical question of this article: Does mobilization condition the relationship between economic grievances and unconventional participation? In Table 3.2, we add the discussed moderator, mobilization, to the equation (model 1 and 2) and interact it with our measures of economic grievances (model 3 and 4).

To test our postulated mechanism of protest mobilization via signaling effects (demonstration and attribution) we interact economic grievances and protest mobilization. If the expectation formulated in our hypothesis is correct, the model should return positive interaction effects that either reduce negative effects of status-based grievances (societal, horizontal dimension) or reinforce mobilizing effects of a worsening of economic circumstances over time (temporal dimension). This is exactly what we find. Both interaction terms are positive and statistically highly significant. An increase in mobilization and opportunity indeed seems to activate citizens confronted with economic hardship.

In order to get a better grasp of absolute levels of (de)mobilization, Figure 1 plots the logged odds ratio of economic grievances on participation in protests, conditional on the level of mobilization and opportunity.

The left plot shows the logged odds ratio of our first grievance measure, relative status, conditional on the level of political mobilization. As we would expect from the results in Table 3.2, lower relative status generally depresses political activity, i.e. the (logged) odds ratio for this variable usually remains in the negative domain below the horizontal zero-line. However, this negative effect is clearly mitigated in a more active protest environment, which provides more opportunities to voice dissatisfaction, and in fact fully disappears in circumstances with an exceptional surge in mobilization.

Table 3.2: Economic Grievances and Protest: Conditional Models

	Model 1	Model 2	Model 3	Model 4
Relative Status	−2.731***		−2.799***	
	(0.194)		(0.196)	
Deprivation		2.088***		1.955***
		(0.574)		(0.574)
Mobilization	−0.000***	−0.000**	−0.000**	−0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Relative Status X Mobilization			0.016***	
			(0.004)	
Deprivation X Mobilization				0.026**
				(0.011)
Age	−0.014***	−0.013***	−0.014***	−0.013***
	(0.000)	(0.000)	(0.000)	(0.000)
Female (1=yes)	0.213***	0.231***	0.212***	0.231***
	(0.013)	(0.013)	(0.013)	(0.013)
Education	0.204***	0.228***	0.203***	0.228***
	(0.005)	(0.005)	(0.005)	(0.005)
Political Interest	0.550***	0.560***	0.550***	0.560***
	(0.008)	(0.008)	(0.008)	(0.008)
Partner (1=yes)	0.004	0.009	0.004	0.009
	(0.013)	(0.013)	(0.013)	(0.013)
Union Membership	0.340***	0.333***	0.340***	0.333***
	(0.016)	(0.017)	(0.016)	(0.017)
Unemployment Rate	0.710	0.433	0.727	0.405
	(0.444)	(0.469)	(0.465)	(0.469)
Union Density	−0.002	−0.001	−0.002	−0.001
	(0.005)	(0.005)	(0.005)	(0.006)
GovParty control	yes	yes	yes	yes
AIC	155679.032	151992.675	155663.847	151989.346
BIC	155847.519	152160.680	155842.244	152167.233
Log Likelihood	-77822.516	-75979.338	-77813.923	-75976.673
Num. obs.	148889	144732	148889	144732
Num. groups: cntry	27	27	27	27
Num. groups: year	4	4	4	4
Var: cntry (Intercept)	0.780	0.750	0.782	0.753
Var: year (Intercept)	0.003	0.003	0.003	0.003

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

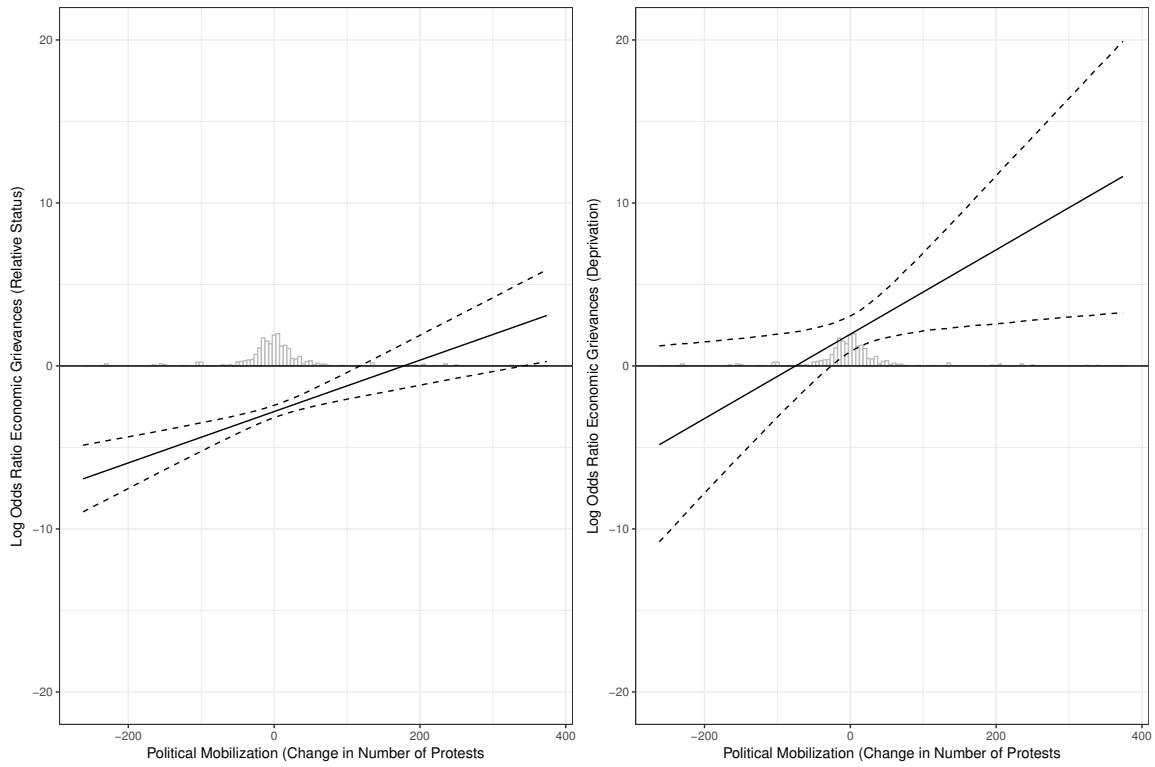

FIGURE 3.1: Economic Grievances and Protest: Conditional Effects

The plot on the right hand displays the same conditional logged odds ratio for the case of deprivation. Again, this plot corroborates our findings from Table 3.2. On average, a deterioration of their situation has a mobilizing effect on citizens and this effect is clearly reinforced in a mobilized protest context that offers ample opportunity to voice dissatisfaction and join existing protest movements.

The visualization of the interaction effects in Figure 1 thus clearly adds credence to our hypothesis of a moderating role of mobilization. The more vibrant the political atmosphere, the stronger the activating effect of deteriorating economic circumstances. If there is visible opportunity to express dissatisfaction, citizens who fare economically worse than in the past are much more likely to protest than citizens who escaped the economic downturn. In contrast, in case these grievances are not actively mobilized, economic deprivation might remain without consequences in the political arena. This is exactly what Kitschelt (1986) and other scholars emphasized three decades ago: Economic grievances might be a driver of protest, but quite likely they are not a sufficient condition for political engagement in itself. Mobilization and opportunity is key in order to activate the disadvantaged. Our findings are clearly in line with these claims.

3.6 Robustness of Results

As a last step, we address several objections that might be raised to the presented results and demonstrate the robustness of our findings by running a number of additional regressions. First of all, we show that our findings do not hinge on the exact specification of the dependent variable. In our main model, we relied on a binary variable coded as 1 for all individuals that participated in one of four different forms of political protest the ESS asked for (demonstration, petition, wearing a badge and boycotting products). The dichotomization of the variable based on four different items could be a source of bias. Model 1 in Table 3.3 and 3.4 is thus based on a variable that ranges from 1 to 4 and measures cumulative protest activities of respondents. In addition, one might criticize the inclusion of both wearing a

badge and taking part in product boycotts as measures of "unconventional" participation or political protest in reaction to economic grievances. One the one hand, boycotting products, while clearly being unconventional, might not be seen as a very straightforward reaction to economic hardship. Accordingly, Model 2 in Table 3.3 and 3.4 demonstrates the robustness of our results to a narrow definition of our dependent variable that excludes of boycotts. On the other hand, by the means of factor analysis, Kern et al. (2015) show that demonstrating, signing a petition and boycotting load on the same theoretical concept. As a consequence, they do not integrate the protest form of wearing a badge in their dependent variable. Model 3 in Table 3.3 and 3.4 shows that our results are also robust to their operationalization of protest.

The next robustness check is concerned with potential bias due to the extraordinary time span we analyze, i.e. the Great Recession. Our theoretical argument states a stable conditional relationship between economic grievances and protest. We would thus expect the core findings to be valid beyond the specific context of the Great Recession. What the financial crisis and the following Great Recession essentially provide is a macro-economic shock, resulting in a strong increase in the variance of our independent as well as our dependent variable. Increased variance on both sides of the equation therefore make the years between 2006 and 2012 an interesting test case for our hypothesis, which is not to claim that we would not find similar, but perhaps weaker, results in quiet times. As a consequence, Model 4 is based on a reduced sample up to the year 2008 in order to demonstrate that our model does not take up a mere crisis effect and is valid more generally. The results, based on a much smaller sample size (approx. 70'000 instead of approx. 170'000), tend to support the general thrust of the hypothesis, but, as expected, the effects are weaker. Both coefficients are still positive but slightly smaller. The interaction effect with regard to deprivation fails to reach statistical significance but closer inspection with the help of visualizations displaying the effect for the whole range of the moderator (Brambor, Clark & Golder, 2006) confirms a positive and significant effect of deprivation for about 94% of the entire pre-crisis sample (mobilization levels of -30 and above).

Table 3.3: Robustness: Alternative DV, Relative Status

	DV cum	DV narrow	DV Kern	precrisis
Relative Status	-0.614^{***}	-2.602^{***}	-2.867^{***}	-3.744^{***}
	(0.059)	(0.206)	(0.198)	(0.380)
Mobilization	-0.000^{***}	-0.000^{**}	-0.000^{***}	-0.001^{***}
	(0.000)	(0.000)	(0.000)	(0.000)
Relative Status X Mobilization	0.002^{*}	0.009^{**}	0.016^{***}	0.008^{*}
	(0.001)	(0.004)	(0.004)	(0.005)
AIC	344106.233	146345.435	153003.257	76180.125
BIC	344294.541	146523.832	153181.654	76345.492
Log Likelihood	-172034.116	-73154.717	-76483.629	-38072.062
Num. obs.	148889	148889	148889	72191
Num. groups: cntry	27	27	27	25
Num. groups: year	4	4	4	2
Var: cntry (Intercept)	0.103	0.644	0.838	0.525
Var: year (Intercept)	0.000	0.004	0.004	0.000
Var: Residual	0.589			

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$. Covariates identical to Table 2, not shown.

Finally, one might be concerned that our results are driven by extreme values of our moderator variable, political mobilization. Beyond the logged odds ratios, Figure 1 above also displays the underlying distribution of this variable. One might object that our results are driven by certain country-year observations with exceptionally high levels of change in the prevalence of protests. As a consequence, we run a sensitivity analysis and re-examined the conditional relationship between grievances and protest participation based on trimmed samples. We show that our results remain substantively unchanged when discarding both the 1% and 5% lowest and highest values of our moderator variable (see Table 3.5 as well as Figure A1 in the appendix).

Table 3.4: Robustness: Alternative DV, Deprivation

	DV cum	DV narrow	DV Kern	precrisis
Deprivation	0.409**	1.484**	1.878***	3.408***
	(0.165)	(0.586)	(0.570)	(1.012)
Mobilization	−0.000**	−0.000**	−0.000**	−0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Deprivation X Mobilization	0.007**	0.032***	0.026**	0.024
	(0.004)	(0.012)	(0.011)	(0.016)
AIC	335044.602	142885.504	149483.287	72520.758
BIC	335232.372	143063.391	149661.175	72685.104
Log Likelihood	-167503.301	-71424.752	-74723.644	-36242.379
Num. obs.	144732	144732	144732	68211
Num. groups: cntry	27	27	27	23
Num. groups: year	4	4	4	2
Var: cntry (Intercept)	0.094	0.621	0.818	0.521
Var: year (Intercept)	0.000	0.004	0.004	0.001
Var: Residual	0.591			

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$. Covariates identical to Table 2, not shown.

Table 3.5: Robustness: Trimmed Sample

	Trim 1p	Trim 1p	Trim 5p	Trim 5p
Relative Status	-2.780^{***}		-2.606^{***}	
	(0.197)		(0.210)	
Deprivation		1.874^{***}		2.048^{***}
		(0.558)		(0.590)
Mobilization	-0.000	-0.000^{*}	-0.001	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Relative Status X Mobilization	0.021^{***}		0.033^{***}	
	(0.005)		(0.010)	
Deprivation X Mobilization		0.048^{***}		0.098^{***}
		(0.016)		(0.028)
AIC	148967.210	145286.557	128145.883	124407.957
BIC	149144.898	145463.716	128321.084	124582.548
Log Likelihood	-74465.605	-72625.279	-64054.942	-62185.979
Num. obs.	143142	138985	124664	120507
Num. groups: cntry	27	27	27	27
Num. groups: year	4	4	4	4
Var: cntry (Intercept)	0.763	0.726	0.773	0.743
Var: year (Intercept)	0.003	0.003	0.003	0.002

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$. Covariates identical to Table 2, not shown.

3.7 Conclusion

How does economic inequality affect the functioning of politics? Are democratic principles fundamentally threatened in times of an increasingly unequal distribution of resources? The answer to this question depends on the extent to which economic inequality translates into political inequality. Clearly, economic inequality produces winners and losers, and if the latter increasingly turn their backs on politics, then the democratic ideal is at stake. Given the magnitude of these questions, the relationship between economic grievances and political participation has attracted much attention in political science, with the key question being whether economic hardship mobilizes or demobilizes adversely affected citizens. The existing studies have not yet succeeded in producing an unequivocal answer to this question. In recent assessments of the relationship between economic hardship and individual political reaction, the so-called "withdrawal hypothesis" i.e. the pessimistic interpretation of the relationship between economic inequality and the quality of democracy tends to prevail. However, we contend that much of this research has to date ignored a key message of the social movement literature: political opportunity structures matter a great deal. More precisely, political mobilization and opportunity are crucial context conditions that influence the action repertoire of individuals and decisively affect the micro-level link between grievances and protest. In this paper, we have aimed at bringing the strengths of these two literatures together: on the one hand, we follow the careful theorizing and the solid empirical quantitative framework of recent studies of the relationship between inequality and political participation. On the other hand, we add the crucial moderating factor of political opportunity, and we propose an innovative way of measuring this concept by means of data on protest mobilization during the Great Recession. Our results clearly show that a political environment, which offers opportunity to voice dissatisfaction, activates protest among the disadvantaged. In exceptionally well-mobilized contexts, even relative status grievances entirely cease to depress political participation.

Our results highlight that increasing economic inequality does not inevitably result in ever-increasing political inequality. While the danger of self-reinforcing economic and political inequality is certainly real, political actors within the democratic system have both the means and the power to break or at least mitigate this vicious circle. By providing opportunities to participate in the political process and to express dissatisfaction, political entrepreneurs, parties, trade unions, NGOs and other forces within civil society can help reduce the demobilizing effects of economic adversity and thereby mitigate participatory inequality. While there remains a large gap between the ideal and the reality of democracy, achieving more equal political voice is at least a first important step in opposing the detrimental influence of economic inequality on the functioning of contemporary democratic politics.

3.8 Appendix

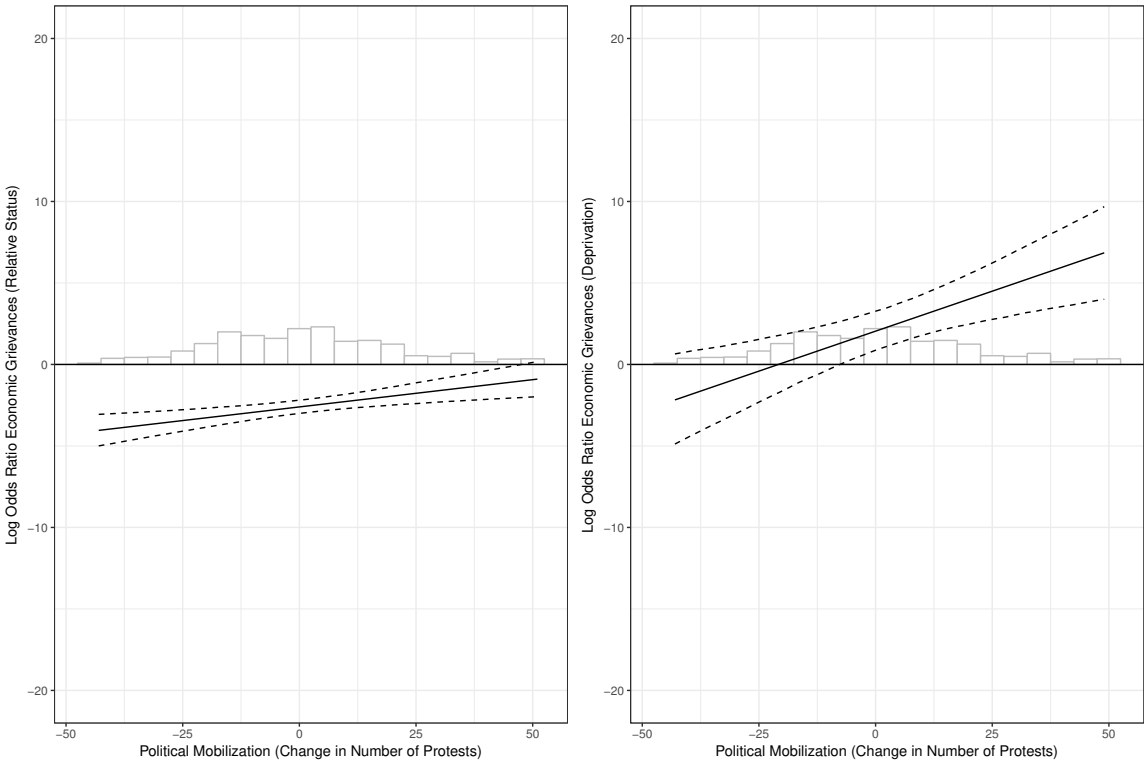

FIGURE A1: Economic Grievances and Protest: Conditional Effects (Trimmed Sample)

TABLE A1: Economic Grievances: Example Spain (2004-2007 extract)

Year	Class	Unemp. Country	Unemp Class	Relative Status	Deprivation
2004	1	0.107	0.044	-0.063	
2004	2	0.107	0.023	-0.084	
2004	3	0.107	0.048	-0.059	
2004	4	0.107	0.137	0.030	
2004	5	0.107	0.083	-0.024	
2004	6	0.107	0.114	0.007	
2004	7	0.107	0.043	-0.064	
2004	8	0.107	0.136	0.029	
2005	1	0.088	0.032	-0.056	-0.011
2005	2	0.088	0.015	-0.073	-0.008
2005	3	0.088	0.044	-0.045	-0.004
2005	4	0.088	0.118	0.030	-0.020
2005	5	0.088	0.055	-0.033	-0.028
2005	6	0.088	0.086	-0.002	-0.027
2005	7	0.088	0.043	-0.045	0.001
2005	8	0.088	0.116	0.027	-0.021
2006	1	0.085	0.027	-0.057	-0.005
2006	2	0.085	0.018	-0.066	0.003
2006	3	0.085	0.036	-0.049	-0.008
2006	4	0.085	0.114	0.030	-0.004
2006	5	0.085	0.068	-0.017	0.013
2006	6	0.085	0.086	0.001	-0.001
2006	7	0.085	0.044	-0.041	0.000
2006	8	0.085	0.107	0.022	-0.009
2007	1	0.080	0.026	-0.054	-0.001
2007	2	0.080	0.013	-0.067	-0.006
2007	3	0.080	0.033	-0.047	-0.003
2007	4	0.080	0.114	0.034	-0.000
2007	5	0.080	0.064	-0.016	-0.004
2007	6	0.080	0.066	-0.014	-0.020
2007	7	0.080	0.040	-0.039	-0.004
2007	8	0.080	0.102	0.022	-0.004

Table A2: Number of protest events per year and action form

Year	Strikes	Petitions	Demonstrations	Blockades	Violent Protests	Other
2005	362	196	733	114	568	51
2006	338	147	753	132	384	53
2007	404	203	769	160	453	56
2008	484	263	885	240	538	80
2009	288	188	956	197	498	70
2010	476	147	907	155	434	57
2011	340	168	954	196	394	58
2012	358	197	985	115	322	72
2013	254	151	820	113	330	70
2014	236	116	631	74	211	34
Total	3540	1776	8393	1496	4132	601

Table A3: Descriptive Statistics

variable	mean	sd	median	minimum	maximum
Protest (ind.)	0.329	0.470	0.00	0.00	1.00
Female (1=yes)	0.535	0.499	1.00	0.00	1.00
Education	3.126	1.342	3.00	0.00	5.00
Age	48.370	18.589	48.00	14.00	123.00
Political Interest	2.380	0.905	2.00	1.00	4.00
Partner (1=yes)	0.576	0.494	1.00	0.00	1.00
Union Membership	0.184	0.388	0.00	0.00	1.00
Relative Status	-0.001	0.038	-0.00	-0.14	0.16
Deprivation	0.002	0.015	0.00	-0.14	0.19
Mobilization	1.181	56.217	-1.00	-262.00	374.00
Unemployment Rate	0.064	0.039	0.06	0.00	0.23
Union Density	29.403	20.113	20.49	5.82	91.54

4 Political Reactions to Occupational Change

Abstract

Deindustrialization, globalization and technological change have transformed the post-industrial employment structure. The most pervasive trend is a stark contraction in semiskilled routine work. This paper explores the political reaction of this once crucial pillar of society and sheds light on the complex interaction between the economic and cultural roots of populism. A dynamic causal analysis of panel data from Germany, Switzerland and the UK demonstrates that individual employment trajectories and *relative* shifts in societal position are key to understanding the political repercussions of a profound transformation of labor markets. It is relative economic decline rather than the actual experience of material hardship that drives support for conservative and right-wing populist parties. Support for these parties withers as soon as voters leave their routine jobs — for better or worse. This finding has far-reaching implications and suggests that 'more welfare' is an ineffective remedy against the ascent of populist movements.

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4.1 Introduction

The political economies of the developed world are today on the cusp of a profound transformation of labor markets. The most important factor behind long-term occupational change is technology (Manning, 2003; Oesch, 2013). Rapid advances in automation and computerization push us into a new era with fundamentally altered labor demand. Almost every second job in the US is at risk of being replaced by smart software or robots during the next decade or two (Frey & Osborne, 2013; but see Arntz et al., 2016, for a more optimistic assessment). Strikingly, technological change has a highly heterogeneous impact on different occupations. Computers tend to complement workers in non-routine jobs but substitute for routine tasks that follow a set of explicit rules (Autor et al., 2003). Accordingly, routine workers in the middle of the education and earnings distribution bear the brunt of workplace automation. Figure 4.1 shows changes in relative employment shares over the last decade and confirms the pattern of contracting job opportunities in the middle. While the direction and magnitude of employment changes in non-routine work at the lower and the upper end of the skill distribution vary from country to country, routine jobs, with only few exceptions, are in strong decline. The "hollowing of the middle" is a widespread phenomenon all across Europe.

This paper asks about the political repercussions of this profound and far-reaching transformation of labor markets. I will argue and demonstrate that employment trajectories are key to understanding the political consequences of technological change. Occupational transitions as a result of changing labor demand in an increasingly automated world of work strongly affect political attitudes. What turns out to be of crucial importance is the distinction between relative economic decline and absolute material hardship. "Surviving" in an occupational environment of structural decline makes routine workers receptive to identity politics addressing status anxiety. However, as soon as they leave the contracting environment of routine work for better or worse, the primacy of status anxiety evaporates,

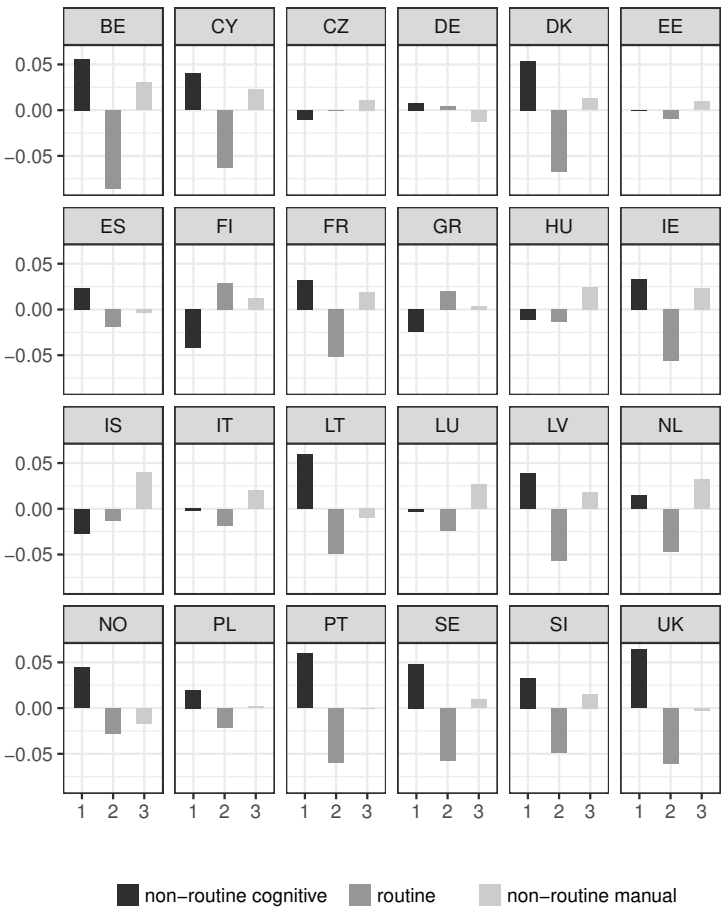

FIGURE 4.1: Relative Change in Employment 2005-2013 (based on EU-SILC data)

which results in strongly declining levels of support for conservative and right-wing populist parties.

Technological change has received a lot of attention in recent years, especially in the fields of labor economics and economic sociology (Autor et al., 2003; Autor & Dorn, 2013; Acemoglu & Autor, 2011; Goos & Manning, 2007; Goos et al., 2014; Oesch & Rodriguez-Menes, 2011; Oesch, 2013). This literature extensively studies how a changing labor demand shapes the post-industrial employment structure and often concentrates on questions concerning wealth, for example by speculating about whether automation will create more jobs than it destroys. What such projections ignore, however, is that a profound transformation of labor markets may intensify distributive conflicts despite a rise in overall welfare. Newly created

positions in highly specialized sectors will most likely not be filled by the very workers whose routine jobs have been made redundant. Even if technological change generates a long-term net gain in aggregate employment, a significant part of the labor force will be confronted with increasing exposure to automation and difficulties to maintain standards of living. At the same time, others, better equipped to face the challenges of transforming labor markets, will be thriving. Technological innovation creates winners and losers and while it undoubtedly opens up new opportunities for many, it also brings serious and sometimes existential threats to others.

The distributive implications of technological change are likely to trigger political conflict. However, only very recently have researchers begun to uncover how automation shapes specific political preferences (Thewissen & Rueda, 2016; Owen & Johnston, 2016). This paper is an attempt to arrive at a more encompassing understanding of the political fallout of technology-induced occupational change. There are three pivotal steps to that end: (1) theorize the different possible exit options of (former) routine workers, (2) quantify the relative frequency of each trajectory and (3) study the political reactions resulting from each of these occupational transitions. All three aspects are interesting on their own right, but for a comprehensive assessment of the political consequences of occupation change it is essential to combine them.

With that aim, I leverage individual-level panel from Germany, Switzerland and the United Kingdom and an empirical strategy tailored to dynamic processes such as occupational transitions (so-called marginal structural models). The use of panel data is an important step forward in two respects. On the one hand, the relative frequency of different transitions out of routine work can be empirically quantified. On the other hand, as actual shifts in employment over time are observed, this approach allows to effectively disentangle the effects of relative and absolute shifts in economic well-being. This distinction allows for a more nuanced analysis of the political reactions to occupational change and significantly improves our understanding of the closely intertwined economic and cultural roots of populism. The empirical analysis demonstrates that it is fear of social decline, an inevitable consequence

of a transforming employment structure, rather than the actual experience of economic hardship that spurs support for right-wing populist parties. This finding has important implications for the debate of how to respond to recent political disruptions and suggests that the often stated answer of "more welfare" will be an insufficient response to counter the ascent of right-wing populism.

4.2 Theory

A large body of research has produced ample evidence for political implications of various forms of labor market vulnerability created by the educational expansion, de-industrialization, globalization or deregulation (e.g. Iversen & Soskice, 2001; Rueda, 2005; Cusack, Iversen & Rehm, 2006; Rehm, 2009, 2011; Walter, 2010; Emmenegger et al., 2012; Rehm et al., 2012; Margalit, 2013; Häusermann, Kurer & Schwander, 2015). However, the literature has only very tentatively started to examine the political consequences of technological change. This is surprising, given the clear-cut distributional implications of this process. Oesch (2015) discusses potential implications of recent developments on labor markets and expects the winners of occupational change to generally endorse libertarian and universalistic values, while the losers rather embrace the culturally conservative positions of right-wing populist parties. This is not entirely in line with the first empirical evaluation of the issue. Thewissen and Rueda (2016) show that routine workers, aware of their non-human competitors, support social security as a public insurance against potential future job loss resulting from technological change. Having a job susceptible to automation is thus associated with a more positive attitude towards redistribution. In addition, Owen and Johnston (2016) provide evidence for a protectionist sentiment among routine workers, especially if their jobs are offshorable and thus particularly exposed to international markets.

However, in order to better understand the broader political consequences of occupational change, we need to differentiate both cause and effect in greater detail. To begin with, I argue that it is crucial to more carefully disentangle the political consequences of *fear-*

ing as opposed to *experiencing* economic hardship. The existing literature often lacks the necessary precision in that matter and thereby misses subtle aspects linking labor market situation to individual political reaction. As a consequence, it runs the danger of drawing incomplete conclusions regarding the political consequences of economic hardship in general and technological change in particular. While routine workers all face similar initial threats from automation, the materialized occupational trajectories are diverse and strongly differ in their material implications. As not only present experience but also past and expected future position are important, trajectory plays a major role in the individual preference formation process (Rydgren, 2013). Furthermore, in order to assess the effects of different ways out of increasingly insecure routine work, it seems necessary to go beyond the study of specific policy preferences. Arguably, it is a very long way from particular political attitudes to political participation and party choice. When it comes to elections, voters have to choose from existing "policy packages" (Emmenegger, 2009) offered by political parties. An ideal package that matches preferences in each and every policy domain is hardly available. At election day, voters need to compromise and balance different, potentially conflicting interests. It is therefore unclear what a demand for more redistribution among workers susceptible to automation (see Thewissen & Rueda, 2016) means in terms of party choice.

The following analysis is an attempt to resolve both weaknesses of existing research. On the side of the explanatory variables, I make an effort to differentiate between relative and absolute economic decline. Following individual employment biographies over time allows to accurately capture different occupational trajectories along with their economic implications. On the other side of the equation, I examine vote intention of individuals affected by technological change and also take into account the possibility of defecting and abstaining from the ballot box altogether. Both parts together, i.e. knowledge on the relative frequency of different occupational trajectories and the political reaction they produce, allow for an encompassing conclusion with respect to the broader political consequences of occupational change in the long-term.

A task-based approach to occupational change

The theoretical framework of this paper builds on influential work in labor economics, which is based on a simplified model economy with three broad task groups (Autor et al., 2003; Spitz-Oener, 2006; Jung & Mercenier, 2014; Cortes, 2016). As *routineness* is the defining feature of jobs susceptible to automation (Autor et al., 2003), the characteristics of an occupation in terms of tasks rather than the level of skills are the focus of interest. There is a continuum of workers who differ in terms of skill-level and sort into one of these occupational task groups labeled as non-routine manual, routine and non-routine cognitive (Cortes, 2016).[1] The group at the center of interest is the group of routine workers. The performed tasks are of repetitive nature, be they manual or cognitive, but not necessarily undemanding and require certain training. Most blue-collar jobs belong to this category but also a significantly large part of basic white-collar work in administration and back offices. Two fundamentally different kinds of non-routine groups exist alongside the group of routine workers. On the one hand, non-routine cognitive work is characterized by non-repetitive, abstract and cognitively demanding analytical and interactive tasks usually requiring some higher education. These are mainly managerial and complex professional jobs, for example business managers, higher education teachers or civil engineers. On the other hand, non-routine manual jobs represent the other end of the skill spectrum and are characterized by relatively simple tasks, which cannot be automated, oftentimes because they require personal interaction or "hand-eye coordination" (Manning, 2003). Most of these jobs are associated with low-skill service employment like taxi driving, food preparation, cleaning or sales.[2]

[1] Acemoglu and Autor (2011), in contrast, consider a setting with a continuum of tasks and three skill groups. Subsequent research has argued for the alternative setting used in this paper, not least because it avoids creating "arbitrary distinctions" (Cortes, 2016, p. 69) between skill-groups. Boundaries between task groups are easier to define by relying on detailed occupational codes, which most often allow for a clear differentiation in terms of their task content.

[2] Many of those low-skilled jobs in the service sector will be threatened by automation in coming years, too. The focus of this study, however, is on the past and contemporary impact of technological change. The rather bleak forward-looking perspective, e.g. given by Frey and Osborne (2013), allows for interesting speculation about further political repercussions in the future but not for empirical analysis of the political consequences observed up to now.

Table 4.1 presents some descriptive information from the three countries analyzed below in order to confirms the notion of routine workers being in the "middle" of the labor force. Compared to non-routine manual (NRM) work, routine (RT) jobs are characterized by more demanding educational requirements and, correspondingly, higher median wages. At the same time, non-routine cognitive (NRC) work is associated with even higher job quality as it clearly outperforms routine work in terms of both indicators. The two last columns in Table 4.1 lend support to the classification of occupations with regard to the level of routineness and the labor market vulnerability associated with it. As expected, routine occupations are strongly dominated by routine tasks as indicated by positive values in the Routine Task Index (RTI, see Autor and Dorn (2013) and Goos et al. (2014) for details), whereas both non-routine groups — irrespective of skill requirements — have negative average values. In line with the idea that computers are especially successful in substituting routine work, the prevalence of repetitive tasks in the middle group goes hand in hand with a distinctively higher probability of being replaced by computers in the near future (Frey & Osborne, 2013). Recent research has established that individuals are aware of these varying degrees of vulnerability to automation. Those in economic positions more likely to be threatened by technological progress appear to be more afraid of competition by robots (Dekker, Salomons & van der Waal, 2017).

Occupational trajectories of routine workers

Based on this theoretical framework, the spectrum of possible occupational transitions for routine workers is clearly defined. The three task groups and the additional possibility of becoming unemployed yield the following four different occupational trajectories.

- Upgrading: Switch from routine job to non-routine cognitive job
- Surviving: Remain in routine job
- Downgrading: Switch from routine job to non-routine manual job
- Dropout: Lose routine job and unable to find a new job

Table 4.1: Descriptive Statistics per Country and Task Group

Country	Task Group	Share of Labor Force	Share Unskilled	Share Female	Median Income	RTI	Prob. of Automation
CH	NRC	48.3	4.6	41.5	5670	-0.656	0.222
	RT	22.6	15.4	56.7	3683	1.519	0.841
	NRM	29.1	19.0	69.5	2492	-0.172	0.612
DE	NRC	35.0	5.9	43.7	2556	-0.654	0.251
	RT	31.2	19.7	49.0	1600	1.157	0.788
	NRM	33.8	25.7	66.5	1100	-0.192	0.613
UK	NRC	33.7	5.8	44.2	1720	-0.744	0.231
	RT	23.8	16.0	52.7	1051	1.547	0.842
	NRM	42.5	25.2	68.5	598	-0.071	0.621

Source: Country-specific panel data, pooled over time (see Table 4.2 for details on the underlying sample). Task Groups: NRC = Non-routine cognitive, RT = Routine, NRM = Non-routine manual. Median Income is in domestic currency. RTI is average value of the Routine Task Index (Autor & Dorn, 2013; Goos et al., 2014). RTI has been merged to individuals on the basis of occupation (ISCO88 2-digit). Prob. of Automation is the average value of the estimated probability of an occupation being replaced due to computerization (see Frey & Osborne, 2013). Correspondence tables have been used to merge these values, originally calculated for occupational groups based on the US Labor Department's Standard Occupational Classification (SOC), with European classifications of occupations (ISCO88 4-digit).

Although routine workers face similar (initial) threats from automation, they vary in their exit options, that is, their capabilities to escape the contracting job opportunities in the middle. In the best case, now-redundant workers in routine jobs will be able to upgrade to non-routine cognitive jobs, which will presumably be accompanied by higher wages, more challenging and varied work and an increase in job security. However, a good part will be forced to downgrade to non-routine manual occupations (Cortes, 2016; Cortes, Jaimovich & Siu, 2016), which is most likely related to a decrease in terms of status and wage. Furthermore, some of the shrinking job opportunities in the middle cannot be absorbed by labor markets and will result in higher unemployment rates among routine workers (Jung & Mercenier, 2014). Losing a job outrightly withdraws both the financial and the psychological benefits of employment (Jahoda, 1982).

Political reactions to occupational change

Technological progress fundamentally changes the relative demand of different occupations and skills. The downsides of these shifts are heavily concentrated on routine workers who are particularly exposed to non-human competition by robots and smart software. This tension gives rise to two related but distinct notions of losing out. The first, economic insecurity, is concerned with the consequences of joblessness in a narrow sense and deals with the financial or resource-specific implications of being made redundant. The second, status insecurity, is related to the feeling of being on the unfavorable side of modernization. In a series of publications, Jahoda (1979; 1982) advanced the idea that jobs have meaning beyond the income they provide. As an "unintended though inevitable" (1982, p. 39) consequence of its main purpose, employment is also a source of psychological well-being by offering, among other factors, collective purpose and social status. While Jahoda's main focus has been on the distinction between being employed or being unemployed, she has also applied the same logic in a more linear way, i.e. with regard to different degrees of job quality. It stands to reason that the psychological benefit in terms of status and prestige someone derives from a job strongly varies with its quality and esteem. Technological change severely alters the employment structure and the relative importance of and value attached to different kinds of work. Being traditionally respected members of the lower middle class, routine workers suddenly find themselves in an environment of structural decline. As a consequence of the shift in the relative demand of work, the importance and esteem of routine work has strongly suffered in the age of automation, which goes hand in hand with a decline in the "return to experience" (Case & Deaton, 2017). The familiar sense of linear progress in the past clashes with insecure future prospects and shatters the idea of ever-ongoing social upward mobility (e.g. Mau, 2015; Nachtwey, 2016).

The changes associated with technological progress and modernization even reach beyond the world of work, further contributing to increasing status insecurity among routine workers. Influential theorists of a risk society (Beck, 1986; Giddens, 1994) have forcefully de-

scribed the transition from a predictable industrial modernity characterized by traditional family arrangements, lifetime employment and secure retirement to a post-industrial age characterized by the "vicissitudes of detraditionalization" (Ekberg, 2007, p. 346). While for some, the liberation of the more rigid social and economic rules might be empowering, for others, the departure from inherited traditions and entering of a new era of technological innovation rather creates a sense of isolation, alienation and discomfort (Ekberg, 2007).

In sum, the losers of technological change have to cope with parallel challenges to both their financial and psychological well-being. Which political reaction should we expect? Crucially, the two notions of insecurity suggest different policy responses. Economic insecurity is best addressed by providing insurance against income loss, i.e. an expansion of the social safety net and a more encompassing and more generous welfare state (Baldwin, 1990; Iversen & Soskice, 2001; Moene & Wallerstein, 2001). Status anxiety, in contrast, is not mainly related to economic or welfare demands but rather to identity politics (Gidron & Hall, 2017). Status loss and the related feeling of being left behind is not primarily a fear of fading into poverty but rather a fear of societal insignificance. Technological progress has disrupted essential "taken-for-granted features" (Rydgren, 2013, p. 6) of routine worker's everyday. Such structural downward pressure is expected to fuel a desire for the status quo ante and a return of the old-established values of a long-gone time preceding the individualistic post-industrial age (Rydgren, 2013; Oesch, 2015). The point of the matter, however, is that political remedies against these two distinct notions of insecurity are rarely on the same menu. Parties that offer credible policy reactions in the domain of identity politics, e.g. right-wing populist parties with an emphasis on the values and virtues of an idealized past (Andersen & Bjørklund, 1990), have limited leeway in the domain of welfare state spending. As center-right parties are the only feasible coalition partner, right-wing populists have strong incentives to promote a moderate welfare program in order to facilitate cooperation and thereby gain leverage in the electoral arena (Geering, 2014; Afonso, 2015). In addition, Harteveld (2016) demonstrated that the combination of economically left and culturally conservative policy stances is equally problematic for vote-seeking parties. Emphasizing

social security issues might attract more voters in precarious positions but at the same time deters well-trained and educated voters. This appears as a strategically rather unattractive choice.[3]

As a consequence, there is no single party that offers credible and satisfying remedies against the parallel challenges routine workers face in an environment structural decline. Routine workers have to balance and *prioritize* between remedies regarding potential economic hardship or status anxiety. The main argument of this paper is that occupational trajectories are key to understanding the relative salience of the two demands. Survivors are the group threatened but not (yet) hit by transforming labor markets: they manage to remain in middle-range routine jobs and therefore largely safeguard the economic benefits of employment. It is crucial to reiterate here that, in economic terms, they are clearly not the worst-off social segment in post-industrial society (Bornschier & Kriesi, 2013). However, due to the structural pressure on this kind of work, they experience *relative* economic decline, which goes along with an ongoing loss of status. Clearly, this diminishes the psychological benefits they derive from work. As a consequence, their most pressing needs are not related to economic standing but rather to social status. Keeping a routine job but being constantly confronted with the threat of social decline highlights status insecurity and makes identity politics salient.

Right-wing populist parties are commonly seen as the most successful political actor appealing to these sentiments of regretting bygone times (e.g. Bornschier, 2010; Oesch, 2008b; Gidron & Hall, 2017). What they offer is not primarily relief from economic stress but remedies against status anxiety by promoting the values of an idealized past where routine workers were a valued and crucial pillar of society. Clearly, these are attractive policy propositions for those "uncomfortable with cultural modernity" (Bornschier & Kriesi, 2013, p. 11).

[3]While so called welfare chauvinism might fit into this pattern, it seems unlikely for voters with a primary demand in a strong welfare state to support such parties. The left is still a much more credible supporter of a generous social safety net. If, however, voters have a *secondary* preference for social security beyond their primary desire for a status quo ante, welfare chauvinist parties are an attractive option.

H1a: *Right-wing populist parties primarily attract survivors in routine work and any transition out of routine work reduces the probability to vote for this party family.*

The countries under examination differ in the political options voters have on election day, which demands more specific theoretical expectations depending on the party system at hand. In countries with a less diverse party-supply side, I expect traditional conservative parties to act as a second-best option for routine workers. Although not promoting the restoration of traditional order as aggressively as right-wing populists, conservative parties are credible advocates of old-established values and expected to be an attractive choice for routine workers with an interest in the status quo ante. Indeed, a positional mapping of the party families of interest underlines that — in the absence right-wing populists — conservative parties are by far the fiercest defendants of traditional values (see Figure A1 in the Appendix). By implication, the hypothesis of a second-best option yields the expectation that conservative parties' attempts to rally routine workers are unsuccessful when competing with even more pronounced demands from right-wing populists. Hence, transitions out of routine work should not result in any significant change in support for conservative parties in the presence of a right-wing populist party

H1b: *In the absence of a right-wing populist party, mainstream conservative parties attract survivors in routine work and any transition out of routine work reduces the probability to vote for this party family.*

H1c: *In the presence of a right-wing populist party, transitions out of routine work are unrelated to the support for mainstream conservative parties.*

These hypotheses imply that it is relative rather than absolute decline that determines support for culturally conservative parties. What about actual decline, then? Downgraders and dropouts both experience decline in absolute terms, most likely a decrease in both status and material resources, albeit to a different extent. While downgraders at least manage to find a job in lower-paid non-routine occupations, presumably in the service sector, dropouts end up unemployed after leaving or losing a routine job. Fear of social decline is thus no

longer the primary motive to vote as the threats of contracting employment opportunities have indeed materialized. Fear turned into experience, which drastically alters the most pressing needs of these individuals. Once unemployed, actual scarcity of material resources rather than status anxiety is the main problem. Dropouts become dependent on social security benefits. This is why they are expected to react with an economic response, thus move away from right-wing populists and instead support left parties who traditionally stand for a generous social safety net. The primacy of economic policy in the face of falling into unemployment is backed theoretically as well as empirically. Unemployment induces both financial and psychological deprivation, but the first is felt immediately while the latter develops in full force only over a longer time span (Jahoda, 1982). However, the focus of this paper is on transitions out of routine work and not on long-term unemployment. The high salience of welfare policy among newly unemployed is also supported on the empirical front. Two different studies based on panel data have established increased demand for redistribution (Owens & Pedulla, 2014) and a tendency to ideological shifts to the left (Wiertz & Rodon, 2017) as an immediate response to a transition into unemployment.

A second likely response is political abstention. As material resources are a well-known prerequisite for political participation (Verba & Nie, 1972), now-unemployed dropouts might also increasingly stay away from the ballot box. In the light of adverse economic conditions resulting from the loss of labor income, individuals might rather spend their scarce resources on "holding body and soul together" than on "remote concerns like politics" (Rosenstone, 1982, p. 26).

H2a: *Dropouts have a higher probability of supporting left parties than survivors.*

H2b: *Dropouts have a higher probability of political abstention than survivors.*

Much in contrast to dropouts, upgraders were able to escape the squeeze in the middle for the better and find safer and presumably better-paid work in non-routine cognitive occupations. This subgroup therefore experienced the bright side of a market-based allocation of jobs and is hypothesized to vote for parties promoting free markets and limited government

interventions. This is also understood as an economic response to occupational change, which results in shying away from right-wing populist parties. But the chosen political alternative obviously differs fundamentally from the one of dropouts due to the diametrically opposite experience with free markets.

> H3a: *Upgraders have a higher probability of supporting market-liberal parties than survivors.*

Differences in the party-supply side again require more specific hypotheses. In the multi-party systems of Switzerland and Germany, market-liberal parties with a distinct profile from the two major blocks at both ends of the ideological spectrum have since long been an integral part of the political landscape. They have the most pronounced pro-market stance, if not in position then at least with respect to the relative attention they pay to economic policies. In contrast, the United Kingdom, a majoritarian democracy with, until recently, a two-party system, does not know a party that fits this profile. The Liberal Democrats clearly differ from the continental pro-market party in their economic profile with a moderate position relatively close to the parties of the Left (see Figure A1). Upgraders in the United Kingdom thus might rather opt for the Conservative Party in search for market-liberal policies.

> H3b: *Upgraders in the United Kingdom support the Conservative Party rather than the Liberal Democrats.*

The political reactions of downgraders are the most difficult to anticipate. On the one hand, they experienced a certain decline in status and, most likely, material resources. On the other hand, they were able to remain in the labor force and uphold at least some labor income and economic independence. I am agnostic as to whether experienced economic drawback or fear of further social decline prevails regarding their political decision making and refrain from formulating a hypothesis for this group. Figure 4.2 provides an overview of the occupational transitions underlying the four distinct treatments and the accordingly expected political reactions.

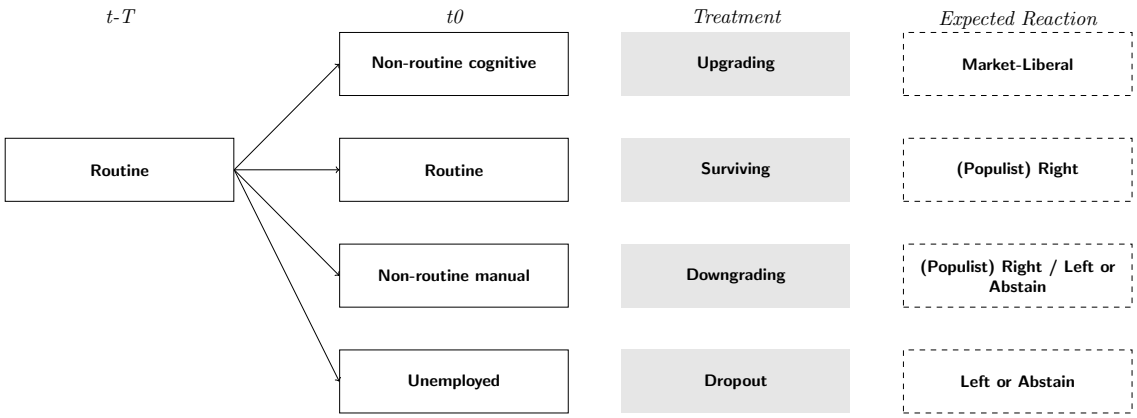

FIGURE 4.2: Theoretical Framework

4.3 Empirical Strategy

Data and Operationalization

Panel data with detailed information on respondents' occupation spanning over a reasonably long time span are an essential prerequisite for studying the political consequences of occupational change. The availability of such data therefore largely determines the case selection for this study. For the following analysis, I collected longitudinal data from the Swiss Household Survey (SHP, w15), the German Socio-Economic Panel (SOEP, v30) and the British Household Panel Survey (BHPS, w1-18) as well as its successor the United Kingdom Household Longitudinal Study (UKHLS, w1-5, special license access).

The most important variable for the present analysis, individual occupational transitions, is based on the classification proposed by Cortes (2016), which builds on the influential Autor-Levy-Murnane model (Autor et al., 2003) and related work in labor economics (Spitz-Oener, 2006; Acemoglu & Autor, 2011; Jung & Mercenier, 2014). On the basis of the main activities required to perform a job, occupations are classified into three task categories: non-routine manual, routine and non-routine cognitive (cf. Acemoglu & Autor, 2011). Cortes'

classification is based on US Census Occupation Codes (COC) and has been translated to an analogous grouping based on ISCO codes (four digit version).[4]

This simple grouping into three task groups yields a straightforward setting for the measurement of occupational transition patterns (see Figure 4.2). Remaining in a routine job, i.e. being a "survivor", has been coded as 1 if an individual's occupation (ISCO code) is classified into the routine category in time *t0* as well as in time *t-T*, where T usually is equal to 1 but takes on larger values if the observation is missing in *t-1*. Accordingly, upgraders are coded as 1 if an individual has been classified as routine worker in *t-T* but falls into the category of non-routine cognitive work in *t0*. The same logic applies to downgraders and dropouts.

From these individual transition patterns, I create the central explanatory variable, a multivalued treatment $D_{i,t}$. $D_{i,t}$ is equal to zero if an individual is a "survivor", i.e. in a routine job in *t0* and *t-T*. Hence, routine workers who remain in the contracting occupational environment of routine work represent the reference category. In contrast, $D_{i,t}$ takes on value 1 if an individual upgraded to a non-routine cognitive job, value 2 if she downgraded to a non-routine manual job and value 3 if he became unemployed.

Due to different party systems in Switzerland, Germany and the UK, the dependent variable, vote intention, varies between countries and is created from the specific items in the respective data source (see Table A2 in Appendix for details). It should be noted that the independent questionnaires of the three data sources result in slightly differing operationalizations of the dependent variable, in particular with respect to abstention.

Sample

The main interest of this study is not the impact of social class or occupations *per se* but the political consequences of occupational change, in particular transitions out of routine work. This has important implications with regard to the population of interest. First of

[4]The coding largely follows Oesch's (2013, p. 156) grouping. See Table A1 for the detailed classification.

all, the sample is restricted to those individuals who at some point in their employment history hold a routine job. Second, due to the definition of the main explanatory variable, only individuals with verified occupational trajectories, i.e. with at least two non-missing consecutive observations, are used for the present analysis. The restriction to (initial) routine workers has the convenient side-effect of reducing potential confounding by selection of individuals with politically relevant character traits into specific occupations (see Kitschelt & Rehm, 2014).

The resulting sample consists of individuals who have been in routine work in $t\text{-}T$ and who are in one of the four previously defined occupational states (non-routine cognitive, routine, non-routine manual, unemployed) in *t0*. An individual can therefore contribute multiple observations to the sample, especially if s/he remains in routine work. For example, a respondent who is covered over a period of ten years and has been employed in routine work for six years before becoming unemployed (and without returning to routine work) will contribute five observations to the survivor category and one observation to the dropout category.

Furthermore, the sample is further restricted to individuals of age 18 or more but younger than 65 who are eligible to vote (i.e. have citizenship of the respective country). For the analysis, all years were pooled but countries are examined separately due to differences in the dependent variable and some variations in the underlying coding of the used variables. The resulting sample size for each country is reported in the following table.

Table 4.2: Data Sources and Final Sample Size

Country	**Data Source**	**Time Span**	**Sample**
Switzerland	Swiss Household Panel (SHP)	1999 - 2014	14'397
Germany	Socio-Economic Panel (soeplong)	1989 - 2013	66'210
UK	British Household Panel Survey (BHPS)	1991 - 2008	30'926
	Understanding Society (UKHLS), BHPS sample	2009 - 2013	5'070

Methodological Approach

Which individuals manage to move upward in the occupational structure and which ones are forced to gravitate downwards is obviously not determined by pure chance. Instead, certain personal and contextual characteristics help determine the likelihood and direction of a transition out of routine work. The standard approach to correct for selection is controlling for confounders. However, applied to dynamic processes like the one at hand, controlling itself introduces bias if confounders change over time and are potentially affected by earlier treatment states. For example, higher skilled employees are more likely to upgrade to better jobs (Cortes, 2016) and this occupational upgrade might trigger further training, which, in turn, affects the probability of future occupational transitions. Or an occupational transition might force individuals to move to another region of the country, which is likely to influence both future occupational transitions of an individual as well as his/her political preferences. In essence, in a longitudinal analysis, such time-varying confounders are a pre-treatment and a post-treatment variable *at the same time* (Blackwell, 2013). With conventional (fixed-effects) regression or matching methods, the researcher is left with an uncomfortable trade-off: either conditioning on the time-varying confounder, thus getting rid of omitted variable bias at the cost of potential post-treatment bias, or omitting the confounder to avoid the latter but induce omitted variable bias.

The empirical challenges associated with dynamic causal inference have only recently been addressed in the social sciences. Building on influential work in biostatistics and epidemiology (Robins, 2000; Robins, Hernan & Brumback, 2000), marginal structural models (MSM) have been suggested as a hedge against both omitted variable bias and post-treatment bias at the same time (Blackwell, 2013; Bacak & Kennedy, 2015; Imai & Ratkovic, 2015). Three steps are involved in the estimation of an MSM (cf. Bacak & Kennedy, 2015).[5] The first step involves setting up a treatment model. As we are dealing with observational data, individual probabilities of treatment are unknown and have to be estimated empirically. Treatment

[5]For a formal discussion of the various stages involved in setting up a marginal structural model see the seminal contribution by Robins and colleagues (2000; 2000). Blackwell (2013) provides a theoretical and substantive introduction to political science contexts.

assignment at each time point is modeled conditional on theoretically derived covariates (i.e. known determinants of treatment assignment) and the observed past, including the treatment history of a respondent. This first step can be seen as a "time-dependent version of the propensity score" (Bacak & Kennedy, 2015, p. 115). Second, for every respondent in the sample, we create a weighting variable for each time point t based on these conditional probabilities.[6] Lastly, we run the outcome model: To estimate the causal parameter of a MSM, we perform a simple weighted regression of the dependent variable, vote intention, on the multivalued treatment variable capturing occupational transitions out of routine work. Importantly, this model avoids conditioning on time-varying covariates as confounding is accounted for via weighting instead of controlling. In contrast to regression or matching, we never explicitly condition on confounders in the outcome model, thereby eliminating the threat of introducing post-treatment bias due to covariates that dynamically evolve over time (Blackwell, 2013).

Let me give the intuition behind the weighting approach with a concrete example. In an ideal world, treatment assignment was independent of any other covariates or the treatment history of an individual, basically reflecting the setting of a randomized controlled experiment. In the world of observational data, however, individual characteristics strongly affect the probability of different treatment states. More concretely, depending on a set of covariates such as education or age, some individuals will be much more likely to transition out of routine work. Or, in the case of multi-valued treatments, much more likely to realize treatment A, i.e. occupational upgrading, instead of treatment B, i.e. occupational downgrading. For example, the probability of any occupational transition is known to decrease with age (Autor & Dorn, 2009). As a consequence, older respondents tend to have lower probabilities to get treated. Weighting these respondents by the inverse of a low probability will upweight their influence and help achieve balance in the sample, that is, reduce confounding based on age. This re-weighting of observations according to their individual probability of receiving treatment at each time point thereby creates a pseudo-population

[6] This weight is equal to the inverse product of the calculated conditional probabilities at each time point.

where dynamic selection is eliminated, i.e. where treatment assignment is unaffected by confounding (Robins et al., 2000; Blackwell, 2013; Bacak & Kennedy, 2015).

For the specification of the treatment model, expert knowledge on the determinants of occupational transitions is key. Fortunately, the selection from routine into different non-routine jobs has been studied widely in both labor economics and sociology. Existing research yields clear guidance with regard to the decisive covariates. First of all, studies on local labor markets data have emphasized a strong spatial component with regard to occupational change, driven separately by globalization and technological progress (Autor, Dorn & Hanson, 2013). In addition, regarding individual traits, Cortes (2016) shows that the sorting mechanism out of routine work depends on ability and skills: Especially routine workers with remarkable cognitive resources face a realistic chance of an occupational upgrade. Furthermore, women appear to be much more likely than men to leave declining routine jobs but often end up in usually lower-paid non-routine service jobs (Murphy, 2014). Autor and Dorn (2009), finally, provide evidence for the age effect discussed above. In addition to skills, it is especially young routine workers who climb the occupational ladder while prime age and older workers remain in the contracting occupations of routine employment. Hence, the four most important determinants of the sorting mechanism appear to be region, education, gender and age. This is the core of the treatment model and can be straightforwardly implemented in the empirical application, as these variables are available in all three panel data sets. In addition, as discussed above, the treatment history of an individual is taken into account. I rely on a combination of a one-period lagged treatment variable and the cumulative treatment history (share of years treated) of each respondent. A multinomial model then regresses the multi-valued treatment $D_{i,t}$ on the covariates and treatment history in order to generate individual, dynamic weights for each respondent. In addition, year dummies are included to adjust for period effects.[7]

[7] As recommended by the literature, weights are stabilized by treatment history and time-invariant covariates of the treatment model (van der Wal & Geskus, 2011). Section 4.5 demonstrates the robustness of the results to non-stabilized weights.

MSMs properly adjust for both selection into treatment and measured confounding if the treatment model satisfies the following four assumptions: consistency, exchangeability, positivity and no misspecification (Cole & Hernán, 2008). A discussion of the validity of these assumption is provided in the appendix. In addition, we will return to those assumptions that are, at least partly, empirically verifiable in the robustness section of this paper.

4.4 Analysis

The following analysis is split into two sections. A first part will exploit the empirical richness of the compiled longitudinal data to report some descriptive evidence on the distinct pattern of occupational change in the three countries under scrutiny. The data set combines panel data with detailed individual information on employment from Germany, Switzerland and the United Kingdom over up to three decades. This allows for a quantification of the four possible occupational trajectories of routine workers. The second part connects these transition patterns to individual electoral reactions. Both sections are interesting on its own right but for an encompassing assessment of the political consequences of occupation change it is essential to combine both aspects. We need to know what the most likely political response to each transition pattern is. And we need to know the size and significance of each group in order to gauge their electoral relevance and overall impact in the political decision-making process.

Occupational Transition Patterns

To begin with, a closer look at the general pattern of occupational change in Switzerland, Germany and the UK is in order. Figure 4.3 reveals remarkably distinct employment structures with one striking commonality: The decline of routine jobs. The employment structure in Switzerland has long been characterized by a strong concentration of jobs in highly skilled and specialized non-routine cognitive occupations. And this trend has been reinforced during the last decade. Routine jobs have been less important already at the beginning of the

observed period but nevertheless further declined despite the rather narrow time window of slightly more than ten years. The longer time span available for Germany, in comparison, reveals the dominant position of routine jobs in the 1980s — as well as the remarkable demise of this kind of work over time. At the same time, high-skilled non-routine cognitive work started its triumphal march and an ever-increasing share of work is to be found in demanding analytical and/or interactive occupations. The share of low-skilled non-routine manual work remained relatively stable and increased only marginally over time. Hence, Switzerland and Germany are characterized by a strong and persistent trend of occupational upgrading. As a result, the class structure has in general moved upwards in both countries (Oesch & Rodriguez-Menes, 2011; Oesch, 2013). The employment structure in the United Kingdom, in contrast, has evolved rather differently. Apart from a similar decrease in routine work and a moderate increase in high-skilled jobs, an enduring job growth at the lower end of the skill-spectrum is detectable. This is entirely in line with earlier examinations of this issue, which came to the conclusion that Britain's middle class decline is accompanied by a persistent growth of "lousy jobs" (Goos & Manning, 2007) in the service sector. The decline of the middle thereby leads to a pronounced polarization of the employment structure in the United Kingdom (see also Goos, Manning & Salomons, 2009; Oesch & Rodriguez-Menes, 2011).

Figure 4.3 provides an overview about broad changes in the employment structure and yields first insights into the likelihood of different occupational trajectories. These long-term changes in the structure of labor markets are heavily influenced by compositional effects as they include both entries in and exits out of the labor force. Parts of the decline in routine work is certainly driven by reduced rates of entry from non-employment or higher exit rates into non-employment due to retirement or disability (Cortes, 2016). However, what we are mainly interested in here are not new labor market entrants or pensioners but individual occupational trajectories among the active working age population. Table 4.3 displays effective transition rates of (former) routine workers in the sample. Re-iterating the underlying coding puts the numerical dominance of remaining in routine work into

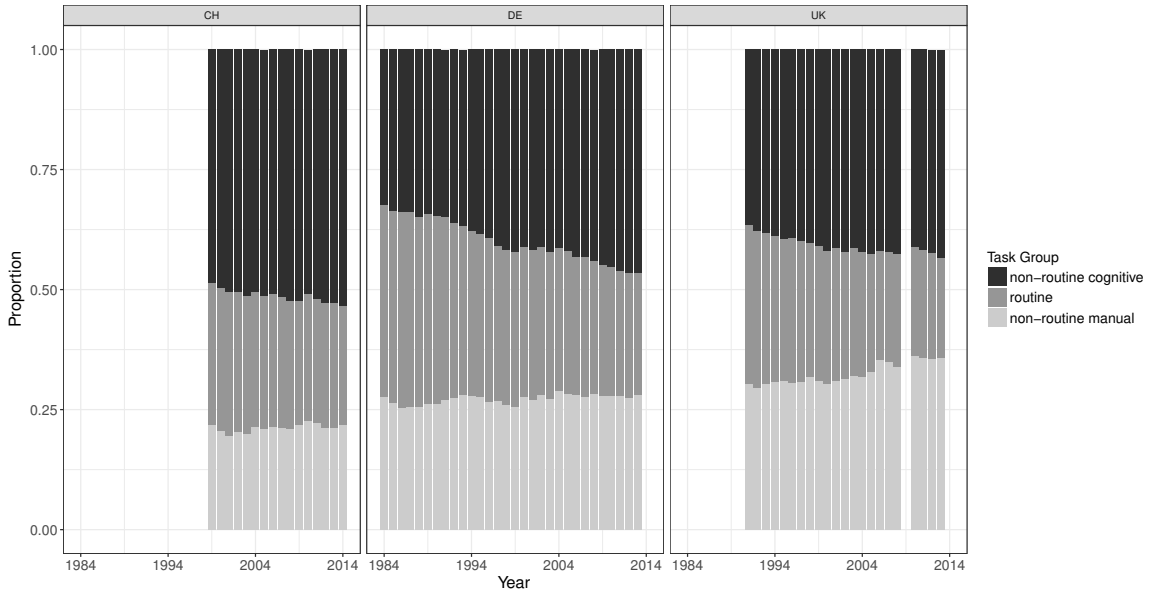

FIGURE 4.3: Relative Share of Task Groups over Time

perspective: The four categories need to satisfy the strict conditions outlined above, i.e. respondents have to be categorized as routine workers in t-T and have a non-missing value for occupation or unemployment in *t0*. An individual who has been working in routine work for five years and then upgrades to non-routine cognitive work will thus contribute four observations to the survivor category and one observation to the upgrader category.

TABLE 4.3: Occupational Transition Patterns

	CH		**DE**		**UK**	
	N	%	**N**	%	**N**	%
Upgraders	**748**	4.5	**3'862**	5.1	**3'771**	10.2
Survivors	**14'956**	90.8	**65'578**	87.0	**28'709**	77.5
Downgraders	**523**	3.2	**3'051**	4.1	**3'255**	8.8
Dropouts	**238**	1.4	**2'853**	3.8	**1'294**	3.4

The results in Table 4.3 support Cortes' (2016) conjecture that a good part of the decline in routine jobs is due to composition effects since a large majority of routine workers in the active working population was still employed in routine occupations in the consecutive

survey. Still, between roughly 10 and 20 percent of (former) routine workers switched into either non-routine cognitive or non-routine manual jobs — or ended up unemployed. Transitions are relatively rare in Switzerland but more frequent in Germany and, most of all, in the more flexible labor market of the UK.

In terms of the transition's direction, the general patterns in the three countries reveal both similarity and interesting variance. Upgrading into more sophisticated non-routine cognitive job does not at all seem an impossible exit route for routine workers — despite different requirements with regard to skills and, often, formal education. To the contrary, it is the most frequent transition in all three countries. Downward transitions into non-routine manual jobs occur only slightly less often. The least frequent trajectory for routine workers, finally, is to fall into unemployment. Regarding the relative frequency of the two different trajectories of social decline, the results mirror the expectations of seminal theoretical contributions in both economics (e.g. Krugman, 1994) and political science (e.g. Hall & Soskice, 2001). Unemployment seems to be a more likely route in the more-regulated labor market of Germany than in the UK, where former routine workers are much more frequently absorbed by low-pay jobs in the service sector. This may result in a lower unemployment rate but comes at the cost of a rapidly expanding "new service proletariat" (Bernardi & Garrido, 2008).

Employment Trajectories and Vote Intention

The next step is to link these different occupational trajectories to individual political responses. Tables 4.4-4.6 report average treatment effects of the three potential transitions out of routine work based on the marginal structural model as described in section 4.3. Switzerland provides the largest number of parties and is characterized by the presence of a strong right-wing populist party throughout the entire time period under study. Furthermore, the so-called consensus system traditionally involves all large parties, which makes preference-based vote choice plausible and reduces the probability of vote choice based on

non-ideological patterns of retrospective economic voting. This context facilitates a thorough examination of the above-formulated expectation that right-wing populists primarily attract "survivors" but less so those individuals who leave routine work for better or worse. The German party system, too, offers various political options to voters with one crucial difference: the absence of a right-wing populist party.[8] This distinction will allow to test whether conservative parties indeed serve as second-best option for voters in the increasingly gloomy occupational environment of routine work (H1b). The absence of a notable populist party on the Right also applies to the third case in the sample. In addition, the United Kingdom has long been dominated by two large parties, facilitated by its majoritarian model of democracy, which implies distinct strategic considerations for voters. Against this backdrop, and because of the moderated ideological positioning of the Liberal Democrats (see Figure A1), a country-specific hypothesis with respect to the political reactions of upgraders (H3b) has been formulated, which will be tested along with H1b and H2a/b.

Let us first have a look at the intercepts, which can be interpreted as a potential outcomes mean and give the probability of a routine worker to support the party specified (or to abstain) in the top row of each of the four models. The results in Table 4.4 confirm the well-established finding that right-wing populist parties (RPP) are indeed successful in mobilizing routine workers (Oesch, 2008b). Although large parts of routine work belong to the traditional core constituency of the Left, RPPs have been proved a very strong competitor for these votes (see, e.g. Gingrich & Häusermann, 2015). This is represented by very similar probabilities to vote for the Left or for the RPP. In the presence of a right-wing populist party, the traditional preserve of the Left turns into a "contested stronghold" (Oesch & Rennwald, 2017). Evidently, conservative parties are less successful in mobilizing among the former core constituency of the Left. This result, fully in line with the realignment litera-

[8]This situation is changing rapidly, however, in Germany as well as in the United Kingdom. With the rise of the *Alternative fuer Deutschland* (AfD) and the *United Kingdom Independence Party* (UKIP), both of which might be considered right-wing populist parties, the political supply side in both countries tends to increasingly resemble other European party systems. Unfortunately, H1a still cannot be tested in Germany and the United Kingdom due to inadequate data availability. The German AfD has only been founded in April 2013 and has therefore not been covered by SOEP v30, on which this analysis is based on. UKIP support has been covered in the latest wave of the UKHLS, but this single wave does not produce a sufficient number of observations to circumvent problems of nonpositivity.

ture, can be read from comparing the baseline probabilities of the two parties in Switzerland but also from the intercepts in Tables 4.5 and 4.6, which display the mobilization success in countries without a right-wing populist party. Despite the attraction of conservative parties, routine workers in Germany and the UK still support left parties in clearly larger numbers. With respect to alternative political options, market-liberal parties are a much less likely choice for routine workers and self-reported abstention is comparatively rare in Switzerland and Germany, while the British data seems to produce more realistic estimates of nonvoting.[9]

TABLE 4.4: Average Treatment Effects of Occupational Transition Patterns, Switzerland

	Switzerland				
DV: Vote Choice	**RPP**	**Cons.**	**Left**	**Liberal**	**Abstain**
Intercept: Routine	0.231^{***}	0.103^{***}	0.258^{***}	0.146^{***}	0.136^{***}
	(0.011)	(0.008)	(0.012)	(0.008)	(0.007)
Upgrade	-0.100^{***}	-0.033	0.070^{*}	0.018	-0.000
	(0.025)	(0.021)	(0.034)	(0.027)	(0.021)
Downgrade	0.003	0.025	-0.001	-0.060^{*}	-0.010
	(0.038)	(0.030)	(0.038)	(0.024)	(0.025)
Dropout	-0.123^{**}	-0.038	$0.146^{\dagger}$	0.025	$0.082^{\dagger}$
	(0.044)	(0.026)	(0.084)	(0.057)	(0.048)
N	8'871	8'871	8'871	8'871	10'313

Notes: Results from a Marginal Structural Model based on stabilized inverse-probability of treatment weights. Treatment model covariates beyond individual treatment history are region, education, age, gender and year dummies. Robust standard errors clustered by individual in parentheses. Data source: Swiss Household Panel (SHP), pooled data between 1999 and 2014. Significance level: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\dagger}p < 0.1$. Regression tables are extracted from `R` using `texreg` (Leifeld, 2013).

How do transitions out of routine work affect vote intention? Remaining in routine work represents the reference category. The coefficients in the following Tables thus report the change in the probability to vote for the specific party of the respective model if an individual switches from routine work to one of the three distinct alternatives. The first column in

[9]The operationalization of abstention with Swiss data is sub-optimal as the household survey does not report turnout directly, see Table A2. Instead, claiming that a respondent did not vote for any party has been coded as abstention.

Table 4.5: Average Treatment Effects of Occupational Transition Patterns, Germany

	Germany			
DV: Vote Choice	**Cons.**	**Left**	**Liberal**	**Abstain**
Intercept: Routine	0.385^{***}	0.520^{***}	0.029^{***}	0.135^{***}
	(0.010)	(0.010)	(0.002)	(0.006)
Upgrade	-0.019	-0.008	$0.019^{\dagger}$	-0.004
	(0.021)	(0.022)	(0.010)	(0.034)
Downgrade	-0.009	-0.013	0.002	0.057
	(0.026)	(0.028)	(0.011)	(0.040)
Dropout	-0.063^{**}	0.066^{**}	-0.011^{*}	0.143^{***}
	(0.022)	(0.023)	(0.005)	(0.028)
N	22'958	22'958	22'958	4'649

Notes: Results from a Marginal Structural Model based on stabilized inverse-probability of treatment weights. Treatment model covariates beyond individual treatment history are region, education, age, gender and year dummies. Robust standard errors clustered by individual in parentheses. Data source: German Socio-Economic Panel (SOEPlong), pooled data between 1983 and 2013. Abstention model is based on years 2005 and 2009 only. Significance level: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\dagger}p < 0.1$

Tables 4.4-4.6 largely confirms the theoretical expectation. It is indeed primarily "survivors" in routine work who are attracted by the promises of RPPs or — in the absence of RPPs — conservative parties, while a transition out of routine work either into more prestigious non-routine cognitive work or into unemployment immediately and substantially reduces the support. The effects are especially pronounced with respect to support for right-wing populist parties. Upgrader's probability to vote for the RPP in Switzerland is lowered by ten percentage points and now-unemployed former routine worker's probability even by more than 12 percentage points. Tables 4.5 and 4.6 provide evidence for conservative parties to indeed act as a second-best solution to satisfy routine workers desire for the status-quo ante. In particular, the transition from routine work into unemployment results in a strong and consistent decline in support for the most conservative party in all three countries. This is a clear indication that it is fear of social decline rather than the actual experience of economic hardship, which drives support for parties promoting traditionalist values and the status quo ante.

TABLE 4.6: Average Treatment Effects of Occupational Transition Patterns, United Kingdom

	United Kingdom			
DV: Vote Choice	**Cons.**	**Left**	**LibDem**	**Abstain**
Intercept: Routine	0.271^{***}	0.491^{***}	0.123^{***}	0.307^{***}
	(0.010)	(0.010)	(0.007)	(0.009)
Upgrade	0.050^{**}	$-0.031^{\dagger}$	0.012	0.000
	(0.016)	(0.018)	(0.011)	(0.020)
Downgrade	-0.018	0.011	0.005	0.021
	(0.019)	(0.020)	(0.013)	(0.018)
Dropout	-0.080^{***}	0.056^{*}	-0.009	0.111^{***}
	(0.023)	(0.028)	(0.017)	(0.030)
N	17'896	17'896	17'896	12'614

Notes: Results from a Marginal Structural Model based on stabilized inverse-probability of treatment weights. Treatment model covariates beyond individual treatment history are region, education, age, gender and year dummies. Robust standard errors clustered by individual in parentheses. Data source: British Houeshold Panel Survey (BHPS), 1991-2008, Understanding Society (UKHLS, BHPS subsample), 2009-2013, data merged and pooled. Significance level: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\dagger}p < 0.1$

Occupational transitions into non-routine cognitive work or into unemployment appear as strong and influential predictors of electoral behavior. This does not apply to downgraders, however. The non-significant difference between routine workers and downgraders found in all three countries indicates that the latter treatment is not in any case strong enough to change electoral preferences. Despite the experience of an occupational downgrade, these individuals still largely share the political preferences of routine workers. Continued support among downgraders thus partly explains an — at least at first sight — puzzling implication of the politics of occupational change: The ongoing or even increasing success of right-wing populist parties in spite of the steadily shrinking electoral weight of routine workers, an integral part of their core constituency. Displaced into lower skilled service jobs, former routine workers still support the same parties.

While the first model offered evidence that transitions into higher-paid non-routine jobs, on the one hand, or into unemployment on the other reduce support for right-wing populist or

conservative parties, the following three models give an indication of which parties upgraders and dropouts turn to instead. The picture with respect to dropouts is very consistent in all three countries: Compared to routine workers who remain in routine work, dropping out of the labor market leads to both strongly increasing support for left parties as well as growing political disenchantment.[10] As a consequence of becoming unemployed, abstention rates among former routine workers increase between 8.2 (Switzerland), 11.1 (UK) and almost 15 percentage points (Germany).

The political reactions of upgraders, finally, differ between countries. H3a anticipated upgraders to support market-liberal parties as they themselves experienced the bright side of a market-based allocation of jobs. This cannot be confirmed for the case of Switzerland. Upgraders do not support market-liberal parties more strongly but appear to have an increased tendency to support the left instead. This is an unexpected result, which might be explained by the strongly changing class-basis of the Swiss Social Democratic Party, whose constituency is increasingly dominated by high-skilled and relatively well-off citizens (Rennwald, 2014), not least attracted by a comparatively very liberal position on democratic freedoms and rights (see Figure A1). The results for the other two countries indeed support the interpretation of this finding as a Swiss idiosyncracy. Upgrading in Germany, in line with H3a, indeed leads to increasing support the market-liberal party but the magnitude of the effect is limited. Ultimately, the third column in Table 4.6 shows coefficients with regard to support for the Liberal Democrats. Let me reiterate here that given both the different strategic considerations voters face in a majoritarian party system and the almost left-leaning economic positioning of the Liberal Democrats, I proposed a country-specific hypothesis H3b. The formulated conjecture that upgraders in the UK rather support the Conservative Party than the Liberal Democrats is confirmed by the results in Table 4.6.

All in all, the presented results clearly support the main thrust of the hypotheses. Culturally conservative parties find strong support among "survivors" in routine work, who share

[10] The effects for Switzerland with by far the lowest number of transitions into unemployment are statistically significant on the 10-percent level with p-values of 0.080 and 0.085, respectively

a bright past and bleak future prospects — but hold on to their dwindling position in the labor market. As soon as workers either manage to escape the squeezed middle for the better or lose their routine jobs and end up unemployed, support for these parties decreases substantially. Contrary to what is often assumed, absolute economic hardship does not appear as a driver of support for parties from the Right. Effectively dropping into unemployment rather increases the probability to vote for the Left or, even more likely, to abstain from the ballot box altogether.[11] The results hold irrespective of the electoral rules in a country, with the exception of upgraders in the UK still — or even more strongly — supporting the Conservative Party, an anticipated result given the strategic incentives of British voters.

4.5 Robustness

The presented results adjust for confounding and post-treatment bias under four assumptions of consistency, exchangeability, positivity and no misspecification. There is no empirical test to verify these assumptions, but credibility in the presented estimates can be increased by the means of sensitivity tests (Cole & Hernán, 2008). Particular emphasis is given to the specification of the treatment model. Two aspects will be looked at more closely: the selected set of covariates controlling for treatment assignment and the exact estimation of the inverse-probability weight, a particularly sensitive aspect of marginal structural models (Imai & Ratkovic, 2015).

Extensive research on the determinants of occupational transitions in different disciplines offers solid ground for the selection of covariates in the treatment model. Yet, one might still object that, in addition to the individual treatment history, the controls for region, education, gender, age and year dummies might not suffice to fully model the treatment assignment mechanism. Hence, I make use of the broad range of available variables in the

[11] Interestingly, this finding squares nicely with a re-analysis of voting patterns in Germany during the 1930s, which questioned and corrected the allegedly commonsensical positive correlation between unemployment and support for the NSDAP (Falter, Link, Lohmöller, de Rijke & Schumann, 1983).

panel data sets and show that all findings are robust to the inclusion of additional potential determinants of occupational transitions. Migration background might be related to language ability and thus affect the probability of transitions beyond the variables already controlled for. Members of a trade union might be less vulnerable to unemployment and potentially more stably embedded in their current job, thus making transitions less likely. Being married could serve as a private household safety net and enable more flexible occupational transitions. Having children, on the other hand, could be expected to have the contrary effect.

The second sensitive aspect is the calculation of the weights used to correct for selection. Estimated weights should have a mean close to one and remain within a reasonable range. Deviation from a mean of one or very large weights are indicators of nonpositivity or misspecification of the treatment model (Cole & Hernán, 2008). Furthermore, very large weights imply that these respondents will contribute disproportionately to the created pseudo-population and thus dominate the weighted analysis (Robins et al., 2000). Mean, range and variance of the estimated weights should therefore be evaluated as these parameters, in case of well-behaved weights, increase our confidence in satisfied assumptions and, thus, in giving the presented results a causal interpretation.

As a first step, the properties of the weight in the baseline model are evaluated.[12] The mean of the estimated stabilized weights amount to 1.004 and ranges from 0.18 to 5.7. These parameters seem largely in line with the criteria formulated above. In addition, Figure 4.4 displays how the estimated weights evolve over time. Data for the Swiss Household Panel is available from 1999 until 2014. The maximal number of observations an individual can contribute to the sample is 14, since the first year necessarily drops due to definition of the explanatory variable (difference from t-T to t). As follow-up time increases, observations get scarcer due to panel attrition and the variance of the weights increase slightly. One of the following sensitivity tests will address increasing deviations for individuals with ten and

[12] Due to space restrictions, I focus on Switzerland and move the evaluation of the other two cases in the appendix (see Figures A2 and A3). All in all, results are similar and lend confidence to the behavior of weights.

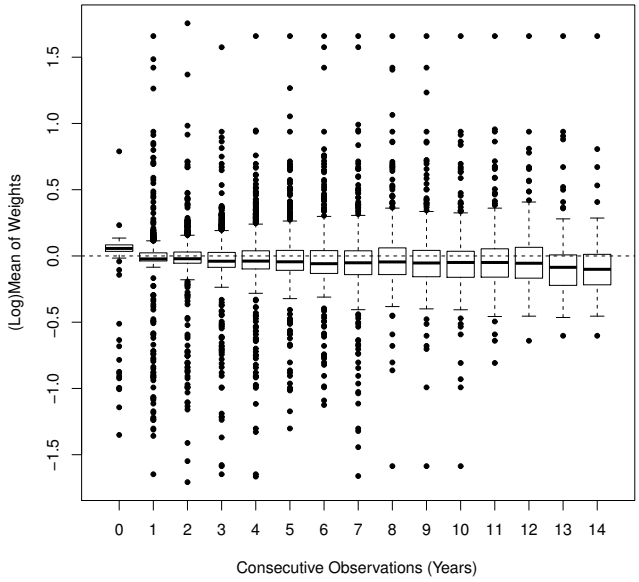

FIGURE 4.4: Evolution of stabilized weights over time

more observations. However, the mean remains very closely to the required value of 1 (log mean 0).

All in all, the estimated weights of the baseline model seem to satisfy the main criteria. Nevertheless, in the following I will evaluate their sensitivity to different proposed remedies for sub-optimally behaving weights. The properties of the estimated weights as well as the resulting estimate of occupational transition on vote intention in the weighted regression are displayed in Table 4.7. I show estimates for dropouts in the first model in Table 4.4, change in probability to vote for a right-wing populist party, noting that all the other estimates are similarly stable.

Table 4.7 presents the results from six different specifications of the model and compares them to the parameters of the baseline model displayed in the top row. Model 2 uses a more fine-grained operationalization of formal education, arguably a central determinant of occupational transitions. A larger number categories of a variable might improve exchangeability but at the same time reduces overlap (Cole & Hernán, 2008). Model 3 adds the

before-mentioned additional covariates to the treatment model (union membership, migration and family background). Both alternative specification hardly change the estimated parameters. If anything, the behavior of the estimated weights is slightly worse as the range marginally increases. Specification 4-8 deal with the calculation of the weights. Model 4 is based on a trimmed version of the estimated weights, a standard approach proposed to counteract disproportionate influence of observations with very small or large weights (Cole & Hernán, 2008). As expected, this procedure strongly narrows the range of the weights. Nevertheless, the estimated effect of a transition into unemployment on voting for a RPP is almost identical to the baseline specification. Model 5 is based on a reduced sample, where only a maximum of 10 consecutive observations per individuals are included because the behavior of the weights gets worse with increasing follow-up time (see Figure 4.4). Finally, as a reaction cautionary voices against stabilization (Talbot, Atherton, Rossi, Bacon & Lefebvre, 2015), different ways of stabilizing the weights are tested. Model 6 and 7 show that the results do not depend on one specific stabilization of the weights.[13]

The estimates of the baseline model presented in Table 4.4 are very stable. The effect of becoming unemployed on voting for a right-wing populist party hardly at all changes across the different specifications examined in this sensitivity analysis. The size of the effect remains within a narrow range of about two percentage points and is strongly significant in each model. This clearly increases confidence that the presented changes in the probability to support a specific party are caused by individual occupational transitions out of routine work.

4.6 Discussion and Conclusion

Occupational transitions appear to significantly affect political decisions and vote intention. In accordance with much of the existing literature, survivors in routine work belong to the

[13]Imai and Ratkovic's (2015) proposed generalization of the the covariate balancing propensity score currently only handles balanced panels, which prevents the implementation of this supposedly more robust method to estimating weights when using highly unbalanced real-world panel data.

Table 4.7: Sensitivity Analysis (Change in Support of RPP among Swiss Dropouts)

		Estimated Weights				Effect of Dropout		
	Specification	Mean	SD	Min	Max	Estimate	SE	p-value
1	Baseline model (see Table 4.4)	1.004	0.296	0.181	5.789	-0.123	0.044	0.005
2	Fine-grained education measure instead of ISCED codes	1.005	0.305	0.128	5.287	-0.128	0.043	0.003
3	Extended set of covariates in treatment model: union, country of birth, married, children	1.006	0.390	0.141	7.485	-0.120	0.049	0.015
4	Weights from baseline model, trimmed (percentile 1,99)	0.995	0.205	0.405	2.004	-0.116	0.046	0.011
5	Sample reduced to respondents with max. 10 consecutive observations	1.002	0.290	0.193	6.074	-0.129	0.040	0.001
6	Baseline model, unstabilized weights	0.997	0.335	0.007	6.507	-0.153	0.038	0.000
7	Baseline model, weights stabilized with treatment history and covariates	0.996	0.158	0.472	3.49	-0.132	0.041	0.001

core supporters of right-wing populist parties. In stark contrast, occupational transitions out of routine work — for the better or the worse — strongly reduce support for parties from the Right. In line with the proposed hypothesis, support for left parties substantially increases among former routine workers who have become unemployed ("dropouts"). At the same time, support for right-wing populist and conservative parties is significantly lower compared to survivors in routine work. This pattern holds in each of the three countries under examination, irrespective of their particular party system. This finding clearly lends

credence to the conjecture that it is rather fear of social decline than the actual experience of economic hardship that drives support for right-wing populist parties.[14]

All in all, the frequency and size of effects of occupational transitions out of routine work are remarkable. It is important to note once again that the results of the above analysis are based on a sample of individuals who have been routine workers at one point in their employment biography. Upgraders have not always been managers and dropouts are not long-term unemployed. Both have been routine workers before, probably for many years. Despite socialization in another occupational environment, transitions into non-routine work or unemployment have strong effects on party choice. This highlights the importance of individual changes in the labor market situation for personal political decisions. Therefore, occupational change does and will shape the political landscape of Western European democracies.

Which political forces are likely beneficiaries of the changing employment structure? The analysis clearly shows that survivors in routine work belong to the core electorate of right-wing populist parties. But this part of their constituency is constantly shrinking. As soon as former routine workers manage to upgrade to better jobs or lose their job and become unemployed, support for right-wing populist and conservative parties withers. Right-wing populist parties benefit from widespread fear of social decline but not from actually experienced economic decline. While the uncertainty concomitant with the fundamental transformation of the employment structure provides fruitful ground for conservative and, in particular, right-wing populist parties, the structural trend of lower rates of entry and perpetual transitions out of routine jobs is not necessarily conductive to their electoral success. In a long-term perspective, the decline of the middle will be accompanied by an ever-growing number of high-skilled labor market entrants and some growth in low-skilled service jobs. The first certainly represent an attractive constituency for culturally and economically lib-

[14] This interpretation is implicitly reflected in a recent publication, which compares different measures of labor market precariousness (Rovny & Rovny, 2017). Adverse labor market conditions measured by actual employment status, i.e. being unemployed or temporary employed, are related to support for the left. In contrast, labor market risk, i.e. fearing unemployment or temporary contracts, spurs support for radical right parties.

eral parties. The jury is still out, however, on the mobilization potential among those individuals who downgrade into the new service proletariat — a growing and increasingly relevant share of the electorate in times of labor market polarization. The above analysis indicated that downgraders do not differ systematically from survivors with respect to political preferences. They might be receptive to the policy programs of parties from the Right and thereby substitute for the structurally diminishing vote share among the declining middle.

What is more, automation, computerization and machine learning techniques have undoubtedly not yet reached their peak and will continue to transform the world of work in the years to come. Technological change will affect sections of the labor force who have so far been spared from the threat of automation and thus constantly preserve or even enlarge the pool of voters who are receptive to policy programs addressing status anxiety. Given the structural roots of the presented findings, there is much reason to expect right-wing populist parties to become a constant feature of the political arena in post-industrial democracy.

What makes this development so fascinating from a political science perspective is the sheer absence of adequate policy reactions. In contrast to other highly salient hot topics like immigration or free trade, national governments are extremely limited in their options to effectively counter the forces of technological progress. Since it is not actual economic adversity that drives the political reactions of the losers of occupational change, the often proposed policy reaction of "more welfare" in the traditional sense will not help alleviate grievances. Rather, these voters want their relative decline in societal status addressed. Right-wing populist have long recognized this. Their proposed policy reactions, whether politically feasible or not, should not be trivialized as mere populist seduction void of content but taken seriously as a programmatic answer to widespread threats to social status and psychological well-being. The powerlessness of domestic governments in the face of relentless technological progress and modernization renders advanced capitalist democracies vulnerable to political forces appealing to voters on the grounds of less tangible identity politics. It is therefore not surprising that the debate about an unconditional basic income has

recently gained steam. In contrast to traditional policies of the welfare state, an unconditional basic income might more effectively mitigate status anxiety in the face of automation by weakening the relationship between employment and social status.

Finally, some caveats of this analysis should be mentioned. Further research will be needed to look more closely into potentially heterogeneous effects of labor market transitions. This paper is based on an economic framework, which bundles different types of jobs and individuals within relatively broad task groups. Interesting questions for future research might include differences between blue- and white-collar routine workers or between male and female routine workers. Furthermore, questions of intergenerational mobility might also contribute to political reactions as the occupational path of life-long employment in routine work becomes increasingly unlikely. How individuals perceive an environment of structural decline clearly depends on many individual and contextual characteristics. Studying these characteristics will further improve our understanding of the political fallout of technological change — a topic that will certainly concern post-industrial societies for some more years.

4.7 Appendix

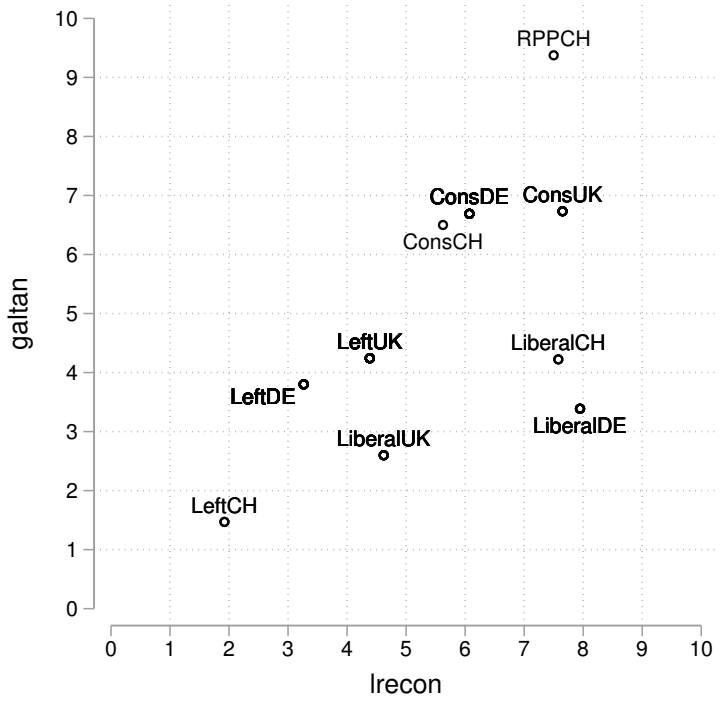

FIGURE A1: Ideological Mapping of Party Families (CHES, weighted by vote share)

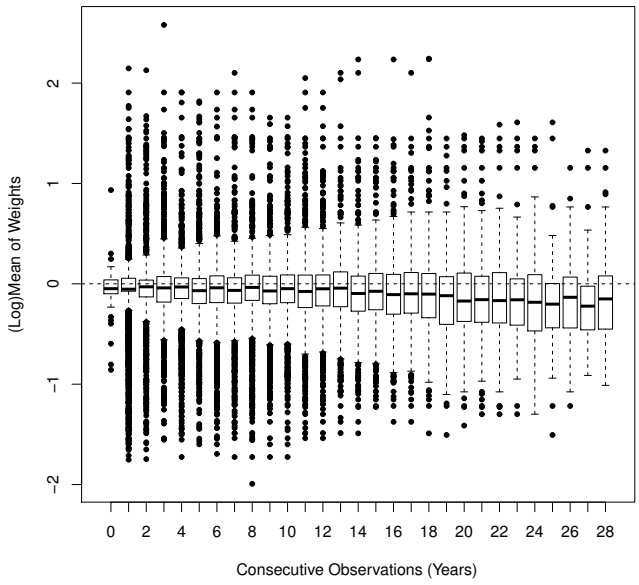

FIGURE A2: Evolution of stabilized weights over time (Germany)

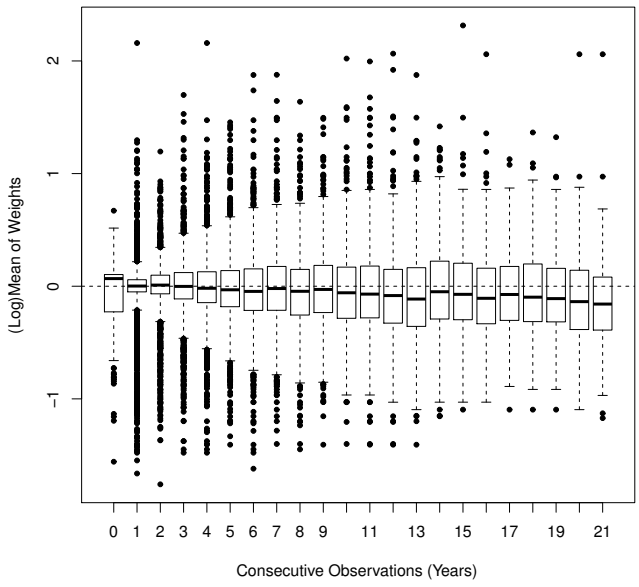

FIGURE A3: Evolution of stabilized weights over time (United Kingdom)

Table A1: Occupation per Task Group

Task Group	ISCO-88
Non-Routine Cognitive	1000, 1120, 1130, 1141, 1142, 1143, 1200, 1210, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1235, 1236, 1237, 1239, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 2000, 2110, 2111, 2112, 2113, 2114, 2121, 2122, 2130, 2131, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2210, 2211, 2212, 2213, 2221, 2222, 2223, 2224, 2229, 2300, 2310, 2320, 2330, 2340, 2350, 2351, 2352, 2359, 2410, 2411, 2412, 2419, 2420, 2421, 2422, 2429, 2430, 2431, 2432, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2450, 2451, 2452, 2453, 2454, 2455, 2460, 2470, 3000, 3100, 3110, 3111, 3112, 3113, 3114, 3115, 3116, 3118, 3119, 3121, 3122, 3130, 3131, 3132, 3133, 3140, 3142, 3143, 3144, 3145, 3150, 3151, 3152, 3211, 3212, 3213, 3220, 3222, 3223, 3224, 3226, 3229, 3231, 3232, 3300, 3310, 3320, 3330, 3340, 3400, 3410, 3411, 3412, 3413, 3414, 3415, 3416, 3417, 3419, 3420, 3421, 3422, 3423, 3429, 3432, 3433, 3440, 3441, 3442, 3443, 3449, 3450, 3460, 3470, 3471, 3472, 3474, 3475, 3480
Routine	100, 3430, 3431, 4000, 4100, 4110, 4111, 4112, 4113, 4115, 4120, 4121, 4122, 4130, 4131, 4133, 4141, 4142, 4143, 4144, 4190, 4210, 4211, 4212, 4213, 4215, 4223, 6110, 6111, 6112, 6121, 6129, 6130, 6141, 6152, 6154, 7000, 7110, 7112, 7113, 7124, 7200, 7211, 7212, 7213, 7214, 7215, 7220, 7221, 7222, 7223, 7224, 7230, 7231, 7232, 7233, 7240, 7241, 7242, 7244, 7245, 7311, 7312, 7313, 7321, 7322, 7324, 7330, 7331, 7340, 7341, 7342, 7343, 7344, 7345, 7346, 7410, 7411, 7412, 7413, 7415, 7420, 7421, 7422, 7423, 7424, 7430, 7432, 7433, 7434, 7435, 7436, 7437, 7440, 7441, 7442, 8000, 8100, 8113, 8120, 8122, 8123, 8124, 8139, 8140, 8142, 8143, 8150, 8159, 8160, 8161, 8162, 8163, 8200, 8210, 8211, 8212, 8221, 8222, 8223, 8231, 8232, 8240, 8251, 8253, 8260, 8261, 8262, 8264, 8270, 8273, 8274, 8275, 8278, 8279, 8280, 8281, 8285, 8290, 8340, 9000, 9133, 9150, 9151, 9153, 9160, 9161, 9211, 9300, 9310, 9311
Non-Routine Manual	3221, 3225, 3227, 3228, 4221, 4222, 5000, 5100, 5110, 5111, 5112, 5113, 5120, 5121, 5122, 5123, 5130, 5131, 5132, 5133, 5139, 5140, 5141, 5142, 5143, 5149, 5160, 5161, 5162, 5163, 5169, 5210, 5220, 7120, 7121, 7122, 7123, 7129, 7130, 7131, 7132, 7133, 7134, 7135, 7136, 7137, 7139, 7141, 7143, 8310, 8311, 8312, 8320, 8322, 8323, 8324, 8330, 8332, 8333, 8334, 9100, 9113, 9130, 9132, 9140, 9141, 9142, 9152, 9162, 9312, 9313, 9320, 9330

TABLE A2: Dependent Variable: Operationalization

Switzerland		
variable	pp19	*Party choice in case of elections tomorrow*
operationalization	RPP	Schweizerische Volkspartei (SVP)
	Cons.	Christlich-Demokratische Volkspartei (CVP)
	Left	Sozialdemokratische Partei (SP); Gruene Partei (GPS); Partei der Arbeit (PdA); Alternative/Solidaritee
	Liberal	FDP.DieLiberalen; Gruenliberale Partei (GLP)
	Abstention	Vote for no party
Germany		
variable	plh0012	*Which political party do you support?*
operationalization	Cons	Christlich-Demokratische Union (CDU); Christlich-Soziale Union (CSU)
	Left	Sozialdemokratische Partei Deutschlands (SPD); Buendnis Gruene.90; Die Linke
	Liberal	Freie Demokraten (FDP)
variable	plh0003	*Voted in last Bundestagswahl (available 2005 and 2009)*
operationalization	Abstention	did not vote
UK		
variable	vote3	*Which party would you vote for tomorrow*
operationalization	Cons	Conservative Party
	Left	Labour Party; Scottish National Party; Greens
	LibDem	Liberal Democrats
variable	vote7	*Did you vote in [month, year] UK general election? (unbalanced)*
operationalization	Abstention	did not vote

Assumptions of the Marginal Structural Model

Marginal structural models (MSM) adjust for both selection into treatment and measured confounding if the treatment model satisfies the following four assumptions: consistency, exchangeability, positivity and no misspecification (Cole & Hernán, 2008)

Consistency (or stable treatment value assumption) requires that an outcome only depends on an individuals' own treatment, not on the treatment of others. This assumption might be critical if an individual who remains in routine work observes an exceptional accumulation of one-directional occupational transitions in his or her direct environment. Mass layoffs, for example, may be a case in point. However, as shown in section 4.4, transition patterns follow a remarkably balanced pattern with similarly frequent positive and negative transitions out of routine work. This balanced pattern should reduce the risk of responses systematically influenced by treatment assigned to other individuals around the individual of interest.

Exchangeability implies no unmeasured confounding and relates to the conditional independence assumption. When exchangeability is achieved, there is no more remaining difference between those who receive treatment and those who do not, i.e. the two group become fully "exchangeable". As this assumption is not empirically verifiable, expert knowledge and an extensive set of covariates is key. As discussed above, occupational transitions have been extensively studied, which lends credence to the selection of the most important determinants. Still, as a robustness check, I will make use of the wide range of available variables in the data and show that the results are robust to a more comprehensive set of covariates like, e.g., union membership, migration background or family situation, that have not explicitly been suggested by previous literature.

The more covariates one adds to the treatment model, however, the more critical is the third assumption. Positivity (also called overlap or common support) requires that there are treated and untreated individuals at every level of confounders. Positivity is violated when "somebody cannot *possibly* be exposed at one or more levels of the confounders" (Cole & Hernán, 2008, p. 658, emphasis in original). At least in the case of the minimal set of

covariates, positivity can easily be verified. Nonpositivity prevents an analysis of UKIP voters in the latest wave of the UKHLS: among the very low numbers of UKIP supporters in the sample, we cannot find incidences of each and every transition of $D_{i,t}$.

Lastly, the models required to fit an MSM have to be correctly specified, where particular attention is advisable with regard to the treatment model, which generates the inverse probability weights for the subsequent weighted regression of outcome on treatment. A necessary condition for a correctly specified treatment model is that the weights have a mean of one (Cole & Hernán, 2008). Furthermore, very small (close to zero) or very large weights can be problematic as the such weighted observations become disproportionately influential. Stabilization (e.g. Robins et al., 2000) and truncation (Cole & Hernán, 2008) have been proposed to obtain well-behaved weights. A careful examination of the properties of estimated weights in different model specifications is highly recommended (see Cole & Hernán, 2008). I present an extensive sensitivity analysis of the calculated weights in section 4.5.

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